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MASS TRANSFER

Thomas K. Sherwood, University of California, Berkeley, **Robert L. Pigford,** University of Delaware, and **Charles R. Wilke,** University of California, Berkeley. 1975, 666 pages, $21.50

Substantially more sophisticated than the 1952 version *Absorption and Extraction*, this volume provides considerably broader coverage of mass transfer. It emphasizes the practical aspects and real problems that require an understanding of theory. Yet, the text minimizes theoretical derivations by explicitly citing over 1,100 contemporary references.

AIR POLLUTION CONTROL: Guidebook for Management

Edited by **A.T. Rossano, Jr.,** University of Washington, Seattle. 1969, 214 pages, $19.50

Important basic principles of the chemistry and engineering of air pollution control are discussed in this comprehensive, introductory text.

SOURCE TESTING FOR AIR POLLUTION CONTROL

Hal B.H. Cooper, Jr., Texas A & M University, and **A.T. Rossano, Jr.,** University of Washington, Seattle. 1971, 278 pages, $14.95

This informative text discusses principles and methods used for testing the gaseous and particulate materials being emitted from industrial, combustion, and other sources. The book logically explains the steps taken in source testing, and extensively examines the equipment, methodology, sampling, and analytical techniques in use for gaseous and particulate particles.

SYSTEMS ANALYSIS AND WATER QUALITY CONTROL

Robert V. Thomann, Manhattan College. 1972, 286 pages, $19.50

Using both mathematical models of environmental responses and management and control schemes, this text 1) presents analytical tools for describing and forecasting the effects of the environment on water quality of streams and estuaries; 2) discusses water quality criteria and wastewate rinputs; and 3) helps readers being evaluating the worth of water quality improvement projects. The benefits of applying cost/benefit analysis to engineering are also discussed.

ENVIRONMENTAL SYSTEMS ENGINEERING

Linvil G. Rich, Clemson University. McGraw-Hill Series in Water Resources and Environmental Engineering. 1973, 405 pages, $18.50

Extensively using the mathematics of systems analysis and computer solutions, this text focuses on how the components of the environmental systems work as a whole rather than apart. Although considering water environment in much detail, it also discusses air pollution and its control; solid waste management, and radiological health.

AIR POLLUTION

H.C. Perkins, University of Arizona. 1974, 407 pages, $17.50. Solutions Manual.

Written to help chemical, mechanical, and sanitary engineering students solve a variety of problems, this text includes a complete discussion of the global effects of air pollution, along with numerous applications-type problems. The material on combustion features a unique discussion of the different effects that equilibrium and reaction kinetics play in causing combustion generated pollution.

SCIENTIFIC STREAM POLLUTION ANALYSIS

Nelson Leonard Nemerow, Syracuse University. 1974, 358 pages, $19.50

A careful balance of the hydrological, chemical, and mathematical concepts involved in the evaluation of stream quality is achieved in this comprehensive description of the analysis of water pollution. The text considers economic and management problems and presents practice problems. Other topics include chemical water qualities for different stream uses, stream management, and estuary analysis.

PROCESS MODELING, SIMULATION, AND CONTROL FOR CHEMICAL ENGINEERS

William L. Luyben, Lehigh University. McGraw-Hill Series in Chemical Engineering. 1973, 558 pages, $19.50

Professor Luyben's book presents only useful, state-of-the-art, applications-oriented tools and techniques to help readers understand and solve practical dynamics and control problems in chemical engineering systems. Discussing actual examples and processes from his experience in chemical and petroleum industries, the author treats mathematical modeling, computer simulation, and process control in a unified, integrated way.

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ESSENTIALS OF MATERIALS SCIENCE

Albert G. Guy, University of Florida, Gainesville. Jan. 1976. 512 pages. $17.50. Instructor's Manual.

Taking an integrated approach, the author emphasizes practical applications while covering the essential aspect of how metals, ceramics, semiconductors, and polymers behave. Using everyday examples, he shows students the connection between the behavior of familiar objects and the new concepts to be explored. Other interesting features of the book include impromptu experiments students can perform, self-evaluating questions, review questions, and problems.

HEAT TRANSFER, Fourth Edition

Jack P. Holman, Southern Methodist University. Jan. 1976. 512 pages. $17.50. Instructor's Manual and Self-Study Cassette Tapes.

Containing both SI and English units, this introductory text includes discussions of special applications to heat pipes and environmental problems. The Fourth Edition's special features include increased emphasis on numerical methods in conduction problems, with inclusion of a generalized formulation technique; new empirical correlations for forced convection heat transfer; and an extensive rewrite of free convection correlations to reflect recent research. The **Self-Study Cassettes** for this edition comprise almost a complete course in heat transfer, are much longer than the Third Edition's, and use only the text without a separate workbook.

THERMODYNAMICS, Second Edition

Jack P. Holman, Southern Methodist University. 1974. 608 pages. $17.50. Solutions Manual, Self-Study Cassette Tapes, & Self-Study Guide.

With this book, all standard thermodynamic topics can be covered from either the classical or statistical viewpoint, or from any desired integration of these viewpoints. The text features 60% expansion of classical thermodynamics and applications; and many new examples and problems worked in both fps and SI units. It is supplemented by **Self-Study Cassettes** of mini-lectures and discussions (approx. 9 hours running time).

PRINCIPLES OF THERMODYNAMICS

Jui Sheng Hsieh, New Jersey Institute of Technology. 1975. 512 pages. $18.50. Solutions Manual.

A clear, unified treatment of various thermodynamic systems, this graduate level text illustrates the wide-range practicality of the basic laws of thermodynamics. Beginning with a comprehensive review of the first and second laws, it treats thermodynamic relations for single- and multi-component compressible systems; stability phase and chemical equilibrium, and other topics.

BASIC ENGINEERING THERMODYNAMICS, Second Edition

Mark W. Zemansky, Emeritus, City College of the City University of New York; **Michael M. Abbott** and **Hendrick C. Van Ness,** both of Rensselaer Polytechnic Institute. 1975. 492 pages. $16.50. Solutions Manual.

Outstanding for its broad, thorough treatment of thermodynamic fundamentals, this text makes applications to many technological processes while avoiding complex problems of a specialized nature. Important changes in the book include a consolidation and unification of material resulting in fewer chapters, the addition of many more worked examples, extensive use of SI units, and use of the same sign conventions for work and heat.

INTRODUCTION TO CHEMICAL ENGINEERING THERMODYNAMICS, Third Edition

J.M. Smith, University of California, Davis, and **H.C. Van Ness,** Rensselaer Polytechnic Institute. McGraw-Hill Series in Chemical Engineering. 1975. 632 pages. $19.50. Solutions Manual.

Including a new chapter on solution thermodynamics, the Third Edition of this successful fundamental text is a unified treatment of thermodynamics from a chemical engineering point of view. Discussing single component systems, multicomponent systems of variable composition, partial properties, fugacity, and other topics, the book has been completely rewritten and expanded, and is enhanced by end-of-chapter problems.

AIR POLLUTION: Physical and Chemical Fundamentals

John H. Seinfeld, California Institute of Technology. 1975. 544 pages. $22.50. Instructor's Manual.

A quantitative, rigorous approach to the science and engineering underlying the air pollution problem, this text comprehensively treats air pollution chemistry, atmospheric transport processes, combustion sources and control methods. The author also explores the physical and chemical behavior of air pollutants in the atmosphere and methods to control them.

him or her to be a chemical engineer.

APPLIED STATISTICAL MECHANICS: Thermodynamic and Transport Properties of Fluids

Thomas M. Reed and **Keith E. Gubbins,** both of the University of Florida. McGraw-Hill Series in Chemical Engineering. 1973, 510 pages, $21.00. Solutions Manual.

Emphasizing applications, this text introduces various ways in which statistical thermodynamics and kinetic theory can be applied to systems of chemical and engineering interests. It presents a fundamental, up-to-date treatment of statistical mechanics and focuses primarily on molecular theory as a basis for correlating and predicting physical properties of gases and liquids. Material on recent theoretical approaches i.e. perturbation theory, is also included.

CHEMICAL ENGINEERING KINETICS, Second Edition

J.M. Smith, University of California, Davis. McGraw-Hill Series in Chemical Engineering. 1970, 544 pages, $18.50

Written to acquaint students with the tools necessary to design new chemical reactors and predict the performance of existing ones, this book develops principles of kinetics and reactor design and then applies them to actual chemical reactors. Emphasis is placed on real reactions using experimental rather than hypothetical data.

PRINCIPLES OF NON-NEWTONIAN FLUID MECHANICS

G. Astarita, University of Naples and **G. Marrucci,** University of Palermo. McGraw-Hill Series in Chemical Engineering. 1974, 304 pages, $19.50

This advanced treatment of non-newtonian fluid mechanics includes discussions of continuum mechanics, modern dynamic theory, and rheology, which are developed to help readers solve fluid mechanics problems, particularly those associated with polymeric materials. The text takes the axiomatic approach, in which general theoretical results are obtained from as few assumptions as possible.

THE INTERPRETATION AND USE OF RATE DATA

Stuart W. Churchill, University of Pennsylvania. 1974, 510 pages, $19.50

This book's completely new, unique treatment of rate processes is unified and generalized in terms of both procedures and processes. Greatly simplifying and reducing the number of concepts needed by the student, it provides an elementary, basic coverage of chemical reactor design, momentum transfer, heat transfer and component transfer. Concepts presented in the text are reinforced by over 300 problems based on raw experimental data from the literature.

COMPUTER-AIDED HEAT TRANSFER ANALYSIS

J. Alan Adams and **David F. Rogers,** both of the United States Naval Academy. 1973, 426 pages, $18.50

Offering useful engineering analysis techniques, this introductory book increases students' involvement and creativity in solving heat transfer problems. It presents a balanced approach between theory and analysis/application of that theory for all three modes of heat transfer. Well-documented, interactive computer programs (BASIC) are an integral part of the text.

MASS TRANSFER OPERATIONS, Second Edition

Robert E. Treybal, University of Rhode Island. McGraw-Hill Series in Chemical Engineering. 1968, 688 pages, $20.50

This text treats major subjects in categories of gas-liquid, liquid-liquid, and fluid-solid contact. It applies modern theories and data to the practical design of equipment and features added material on multi-component gas absorption and distillation.

UNIT OPERATIONS OF CHEMICAL ENGINEERING, Third Edition

Warren L. McCabe, Emeritus, North Carolina State University, and **Julian C. Smith,** Cornell University. Jan. 1976, 1,028 pages, $22.50. Solutions Manual.

A new revision, the Third Edition of this internationally acclaimed text now offers a thorough discussion of the three unit system: FPS, CGS, and SI units. It also introduces fugacity and activity coefficients in the study of phase equilibria, and contains a completely new chapter on multi-component distillation.

CHEMICAL AND CATALYTIC REACTION ENGINEERING

James J. Carberry, University of Notre Dame. Jul. 1976, 704 pages (tent.), $22.50 (tent.)

Dr. Carberry's presentation embraces a diversity of heterogeneous reaction engineering phenomena. He chiefly emphasizes the heterogeneous system on both the laboratory and plant scales, in particular heterogeneous catalysis and catalytic reactors. Discussion includes chemical reaction kinetics, ideal reactor types, real reactor equations and their parameters, and other topics.