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AIR POLLUTION: PHYSICAL AND CHEMICAL FUNDAMENTALS

JOHN H. SEINFELD, California Institute of Technology. 1975, 400 pages (tent.), $18.50 (tent.).

Here is a quantitative and rigorous approach to the basic science and engineering underlying the air pollution problem. The most comprehensive single book available on the subject, it provides an in-depth treatment of air pollution chemistry atmospheric transport processes, combustion sources and control methods.

ENVIRONMENTAL PROTECTION

EMIL CHANLETT, University of North Carolina at Chapel Hill. 1973, 608 pages, $17.50. Solutions Manual

ENVIRONMENTAL PROTECTION is man-centered. This book describes the rationale for the management and protection of our land, air, water, and energy resources. The consequences of mismanagement of the major environmental components are examined at three levels: 1) effects on health; 2) effects on comfort, convenience, efficiency and esthetics; and 3) effects on the balance of ecosystems and of renewable resources. Although scientific and engineering principles are stressed, the material covered is presented in a clear, non-mathematical manner to facilitate a broad understanding by relatively divergent groups.

ENVIRONMENTAL SYSTEMS ENGINEERING

LINVIL G. RICH, Clemson University. *McGraw-Hill Series in Water Resources and Environmental Engineering.* 1973, 405 pages, $17.50. Solutions Manual

While covering a broad spectrum of environmental topics, the focus is on the system as a whole and how its components interact rather than the components themselves. This systems approach is used in formulating and analyzing environmental phenomena, as well as in the selection and design of engineered facilities needed for controlling the environment. Although water environment is considered in greatest detail, also included are air pollution and its control, solid waste management and radiological health. The mathematics of systems analysis and computer solutions is used extensively.

SYSTEMS ANALYSIS AND WATER QUALITY MANAGEMENT

ROBERT V. THOMANN, Manhattan College. 1972, 286 pages (tent.), $19.50 (tent.)

Using both mathematical models of environmental responses and management and control schemes, the text provides a series of analytical tools for describing and forecasting the effects of the surrounding environment on the water quality of a stream or estuary, presents information on water quality criteria and wastewater inputs, establishes a point of departure for evaluating the worth of water quality improvement projects and discusses the benefits of applying cost/benefit analysis to engineering.

SOURCE TESTING FOR AIR POLLUTION CONTROL

HAL B. H. COOPER, JR., University of Texas at Austin, and AUGUST T. ROSSANO, JR., University of Washington. 1971, 278 pages, $13.50.

A discussion of principles and methods used for testing of gaseous and particulate materials being emitted from industrial, combustion and other sources is presented in this informative text. Organized to give the reader a logical presentation of the steps taken in source testing, the book includes an extensive examination of the equipment, methodology, sampling, and analytical techniques in use for gaseous and particulate particles.

AIR POLLUTION

H. C. PERKINS, University of Arizona. 1974, 407 pages, $15.50. Solutions Manual

To date, this is the only truly engineering-oriented text on the subject that draws upon the student's background in analyzing and solving problems in air pollution. The treatment is sufficiently detailed to enable chemical, mechanical, and sanitary engineering students to solve a variety of problems. A complete discussion of the global effects of air pollution is included along with numerous applications-type problems.

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MARK W. ZEMANSKY, Emeritus, City College of the City University of New York, MICHAEL M. ABBOTT and H. C. VAN NESS, both of Rensselaer Polytechnic Institute. 1975, 448 pages (tent.), $15.00 (tent.). Solutions Manual

Important changes in this revision include a consolidation and unification of material resulting in fewer chapters, the addition of a large number of worked examples, extensive use of SI units, and use of the same sign conventions for both work and heat. Also featured are an expanded treatment of refrigeration and power cycles and extension of the discussion on flow processes to include adiabatic flow processes, especially transonic flows.

SOLIDIFICATION PROCESSES

MERTON C. FLEMINGS, Massachusetts Institute of Technology. 1974, 580 pages, $19.50. Solutions Manual

Professor Flemings has written the only book that treats the engineering side of solidification processes in depth. Unique in its application of solidification theory, SOLIDIFICATION PROCESSES builds on the foundation of heat flow, mass transport and interface kinetics. Similarities as well as differences between processes are highlighted, and among the processes considered are crystal growing, shape casting, ingot casting, growth of composites and splat cooling.

MASS TRANSFER

THOMAS K. SHERWOOD, ROBERT L. PIGFORD, and CHARLES R. WILKE, all of the University of California, Berkeley. 1975, 512 pages (tent.), $18.50 (tent.).

Compared to the 1952 version *Absorption and Extraction*, this volume is substantially more sophisticated, providing a much broader coverage of mass transfer. Emphasis is on the practical aspects and real problems that demand an understanding of theory. Yet, theoretical derivations are minimized by explicit citation of over 1,100 contemporary references.

PRINCIPLES OF THERMODYNAMICS

JUI SHENG HSIEH, New Jersey Institute of Technology. 1975, 500 pages (tent.), $16.50 (tent.)

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INTRODUCTION TO METALLURGICAL THERMODYNAMICS

DAVID R. GASKELL, University of Pennsylvania. *McGraw-Hill Series in Materials Science and Engineering*. 1973, 550 pages, $19.50.

Here is a modern text which details the thermodynamics of high temperature systems encountered in metallurgy, via systematic development of the criteria governing equilibria in metallurgical reaction systems. Use of the thermodynamic method is demonstrated by an extensive illustration program using, as examples, real systems which have been carefully selected to illustrate the thermodynamic principles involved.

INTRODUCTION TO CHEMICAL ENGINEERING THERMODYNAMICS, Third Edition

J. M. SMITH, University of California at Davis, and H. C. VAN NESS, Rensselaer Polytechnic Institute. *McGraw-Hill Series in Chemical Engineering*. 1975, 672 pages (tent.), $16.50 (tent.).

Including a new chapter on solution thermodynamics, the third edition of this successful fundamentals text maintains a unified treatment of thermodynamics from a chemical engineering viewpoint. The chapters on phase and chemical-reaction equilibrium have been rewritten and expanded in order to present a coherent exposition of these topics.

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SEPARATION PROCESSES

C. JUDSON KING, University of California, Berkeley. *McGraw-Hill Series in Chemical Engineering.* 1971, 736 pages, $19.50. Solutions Manual

This text stresses the many common aspects of the functioning and analysis of different separation processes, such as distillation, absorption, and extraction. Modern computational techniques for single and multistage separations are considered with the emphasis on an understanding of the various conditions which favor different computational approaches.

THE INTERPRETATION AND USE OF RATE DATA

STUART W. CHURCHILL, University of Pennsylvania. 1974, 510 pages, $19.50. Solutions Manual

Professor Churchill offers a completely new and unique treatment of the rate processes which is unified and generalized in terms of both procedures and processes. An elementary, basic coverage of chemical reactor design, momentum transfer, heat transfer and component transfer is provided. Discussion focuses on raw, experimental data rather than on hypothetical processes and data.

MOMENTUM, HEAT AND MASS TRANSFER, Second Edition

C. O. BENNETT, University of Connecticut, Storrs and J. E. MYERS, University of California, Santa Barbara. 1974, 810 pages, $17.95. Solutions Manual

Combining a rigorous approach to fundamentals with an extended treatment of practical problems, this revision illustrates basic ideas by applications to industrial processes. The reader is offered an understanding of the principles which govern the operation and design of chemical and physical processes in industry. Mathematics through differential equations is used freely, but empirical procedures are also described. New appendixes give sufficient data so that the problems can be done without reference to a handbook. In addition, 50% of the problems are new.

THERMODYNAMICS, Second Edition

JACK P. HOLMAN, Southern Methodist University. 1974, 608 pages, $16.50. Solutions Manual. Self-Study Cassettes, $65.00. Self-Study Guide, $3.50.

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AIR POLLUTION CONTROL: GUIDEBOOK FOR MANAGEMENT

AUGUST T. ROSSANO, JR., University of Washington, and HAL B. H. COOPER, JR., University of Texas at Austin. 1969, 214 pages, $21.50.

The book provides a comprehensive and balanced treatment of the complex technical and administrative nature of air pollution problems. All major elements of the field are included to provide both a text and background reference of the subject in one volume.

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