

Three Wiley Texts for Chemical Engineering Students

PROCESS ANALYSIS BY STATISTICAL METHODS

By DAVID M. HIMMELBLAU, University of Texas, Austin, Texas

Both old and new techniques of process evaluation and model-building by statistical methods are described and contrasted in this text-reference.

The "process analysis" of the title refers to the analysis—by statistical techniques—of continuous industrial processes typified by chemical, petroleum or food industries, or of continuous natural processes such as river flows, biological growth and decay. The introduction of these methods into process calculations assures more precise statements about uncertainty factors, and hence to better decision-making.

Highlights are generous illustrative problems and suggested alternatives for practical application if the basic theory should prove inapplicable.

1970 463 pages \$19.95

PROCESS ANALYSIS AND SIMULATION, Volume I: Deterministic Systems

By DAVID HIMMELBLAU, University of Texas; and KENNETH B. BISCHOFF, University of Maryland

First-of-its-kind, timely, this text focuses on *how to build* and *solve* deterministic mathematical models as they are applied to the process industries. In addition to its classroom function, for seniors and graduate-level students in chemical engineering analysis, this volume is of value for control and mechanical engineers.

Demonstrating the solution of various models and submodel systems, the authors present a variety of categorizations with realistic appraisals of utility, stressing the importance of a balanced overall perspective.

The three major sections follow a brief introduction to the vocabulary and philosophy of process analysis. The first part deals with model classification and formulation, the second itemizes individual units or subsystems, and the last section analyzes the complex system formed by a multiplex of subsystems.

Supportive figures and tables, copious problems and a wide range of illustrations from diverse sources augment the text.

1968 348 pages \$17.95

FUNDAMENTALS OF MOMENTUM, HEAT AND MASS TRANSFER

By JAMES R. WELTY, CHARLES E. WICKS, and ROBERT E. WILSON, all of Oregon State University

This is an introductory-level textbook which unifies the traditionally separate fields of momentum transfer (fluid mechanics), heat transfer and mass transfer (diffusion). Comprehension is stressed, so that an understanding of one type of transfer will be used to stimulate understanding of other areas and types of transfer processes.

The transfer process itself is examined as a basic part of engineering curricula, as much a part of fundamental engineering education as thermodynamics or mechanics. Special consideration is given radiant heat transfer and the role of turbulence.

Topics are organized flexibly, so that the material may be considered in either the series or "parallel" approach. Furthermore, each major subdivision of the text is annotated with a chapter supplying specific applications of the textual matter to industrial problems.

1969 697 pages \$16.50



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