

Thermal Conductivity of Gases and Liquids, N. V. Tsederberg, Massachusetts Institute of Technology Press, Cambridge (1965). 246 pages.

This book represents a monograph on the thermal conductivity of dilute gases and their mixtures, dense gases, liquids and their solutions, and aqueous electrolyte solutions. Also, methods are presented for the calculation of the thermal conductivity of plasmas. This text contains an excellent review of experimental and theoretical studies which, for the most part, were conducted in the Soviet Union. The author apparently does not mention other excellent contributions in this area which have been carried out elsewhere. Despite this shortcoming, this monograph represents an excellent compilation of the theoretical and experimental contributions of the Russian scientists that makes it a desirable reference text, especially since most of these references are not easily accessible elsewhere.

This text, translated by Scripta Technica, is sufficiently broad in its contents to make it a useful reference to engineers and scientists engaged in the design of processes encountered in the chemical industries and in research concerned with space technology and related fields.

GEORGE THODOS
NORTHWESTERN UNIVERSITY

Chemical Reaction Analysis, Eugene E. Peterson, Prentice-Hall, Engelwood Cliffs, New Jersey (1963). 276 pages, \$12.50.

This is an excellent book, and one that is very timely. Heretofore, it has been necessary to consult the journal literature for much of the information on the design and analysis of chemical reactors. Dr. Petersen has brought together the science and technology of chemical reactors and has presented it in a logical and understandable manner.

Much of the literature on chemical kinetics is characterized by hazy definitions and vague terminology. In contradistinction, here the terms are clearly defined and accurately used. Most of the definitions are presented first from a phenomenological point of view; and then the accurate mathematical relations are introduced.

(Continued on page 955)

- Gas-Liquid Mass Transfer in Cocurrent Froth Flow
J. M. Heuss, C. J. King, and C. R. Wilke 866
- Effects of Mixing on Chain Reactions in Isothermal Photoreactors
Frank B. Hill and Richard M. Felder 873
- Phase Equilibria for Strongly Nonideal Liquid Mixtures at Low Temperatures
C. A. Eckert and J. M. Prausnitz 886
- Analysis of Heterogeneous Catalytic Reactions by Nonlinear Estimation
Leon Lapidus and T. I. Peterson 891
- Interaction Model for Critical Temperatures of Multicomponent Mixtures of Methane-Free Aliphatic Hydrocarbons *Okan Ekiner and George Thodos* 897
- Mathematical Models for Mass Transfer Accompanied by Reversible Chemical Reaction *Chen-Jung Huang and Chiang-Hai Kuo* 901
- Falling Cylinder Viscometer for Non-Newtonian Fluids
Edward Ashare, R. Byron Bird, and Jaime A. Lescarboursa 910
- Vapor-Liquid Equilibrium in the Methane-*n*-Hexane-Nitrogen System
Robert S. Poston and John J. McKetta 917
- Correlations of Selectivity Parameters for Separations Extractions of Hydrocarbons with Fluorochemicals *M. S. B. Munson* 920
- Isothermal Activity Coefficients for the System Cyclohexane-*n*-Heptane-Toluene at 25°C. *Takashi Katayama, Edmond K. Sung, and Edwin N. Lightfoot* 924
- An Application of Adaptive Control to a Continuous Stirred Tank Reactor
Edward D. Crandall and William F. Stevens 930

COMMUNICATIONS TO THE EDITOR

- Heat Transfer in Vertical Annular Two-Phase Flow *G. A. Hughmark* 937
- A Method of Solution for Mass Transfer with Chemical Reaction Under Conditions of Viscous Flow in a Tubular Reactor *Chia-Jung Hsu* 938
- Effects of Solvent Purity on Non-Newtonian Viscosity *W. D. Ernst* 940
- Heat Transfer Efficiency in Rough Pipes at High Prandtl Number
J. W. Smith and R. A. Gowen 941
- Diffusion with Consecutive Heterogeneous Reactions *J. L. Hudson* 943
- Predicting Vertical Film Flow Characteristics in the Entrance Region
Duane F. Bruley 945
- Heat Transfer to Coils in Propeller-Agitated Vessels
A. H. P. Skelland, W. K. Blake, J. W. Dabrowski, J. A. Ulrich, and T. F. Mach 951
- Information Retrieval 944
- Errata 959
- Academic Openings 959