

not expect to hear any complaints about obscurity or loftiness.

While the book could not serve as the only text for an engineering course, I recommend that all instructors of beginning engineering thermodynamics have a copy in their library and consider it for either a supplementary required book or a reference for their students to access. Teachers will find it a valuable resource for correct citations of thermodynamic history, for good concepts, developments and problems for beginners and for enhancing their own appreciation of the wondrous breadth of possibilities that thermodynamics allows in pedagogy and application. It may also be the best way to help that not-so-small set of students whose understanding depends on concrete physical examples and straightforward discussion in a text they can hold in their hands as much as, if not more than the sophistication and beauty of the logic described by their instructor. □

INTEGRAL METHODS IN SCIENCE AND ENGINEERING

*Edited by F. R. Payne, C. C. Corduneanu,
A. Haji-Sheikh and T. Huang*
Hemisphere Publishing Company, 1986,
653 pages, \$95.50

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This is a proceedings volume of the first international conference on global techniques, held at the University of Texas at Arlington in March, 1985. The main emphasis of the conference and its proceedings was and is global solution methods, such as the finite element method (FEM), boundary elements (BEM) and integral transforms, to name a few. A second emphasis is the application of such methods to a wide variety of physical problems, of which those in the fluid mechanics and thermal sciences areas are probably of most interest to chemical engineers.

The book contains fifty papers and two synopses, arranged into six topic areas: mathematical physics, mathematical analysis, fluid mechanics, solid mechanics, thermal sciences and finally optimization and population dynamics. Some unity with areas is attempted by means of a summary by one of the editors, before the papers for each area. Given the aim of diversified applications, however, this is not very successful.

The volume itself is attractively bound and well-presented. The papers are not in a standard type, being reproduced from camera-ready copy, but apart

from one or two cases they are clearly laid out and easy on the eye. The writing styles vary widely, from introductory (as in Payne's advocacy of direct formal integration [DFI] methods) to the very abstruse "theorem-proof" layout of one or two contributions in the mathematical analysis section.

I do not believe this book would be suitable as a main text for any chemical engineering or applied mathematics course, due to its diversified nature. It is unlikely that there is *enough* of interest to any one reader to warrant the \$95 purchase price. On the other hand, there will be *something* of interest to anyone using mathematical methods in engineering. A copy should be available in the library of any educational institution, from which judicious selections could well enhance graduate courses in applied mathematics, fluid mechanics or heat transfer. □

ChE books received

Seventh Symposium of Biotechnology for Fuels and Chemicals, edited by Charles D. Scott; Wiley Interscience, Somerset, NJ 08873; 741 pages, \$84.95 (1986).

Design of Devices and Systems, by William H. Middendorf; Marcel Dekker, New York, NY 10016; 456 pages, \$35 (1986).

Selected Papers of Turner Alfrey, edited by Raymond F. Boyer and Herman F. Mark; Marcel Dekker, 270 Madison Ave., New York 10016; 592 pages, \$95 (1986).

Handbook of Aqueous Electrolyte Solutions: Physical Properties, Estimation and Correlation Methods, by A. L. Horvath; John Wiley & Sons, Halsted, Somerset, NJ 08873; 631 pages (1985).

Dioxins in the Environment, by Michael A. Kamrin and Paul W. Rogers; Hemisphere Publishing, 79 Madison Ave., New York 10016; 328 Pages, \$49.95 (1985).

Process Plant Layout, Edited by J. C. Mecklenburgh; Halstead Press, Wiley & Sons, Somerset, NY 08873; 625 pages (1985).

Fabric Filtration for Combustion Sources, R. P. Donovan; Marcel Dekker, New York, NY 10016; 448 pages, \$75 (1985).

Economic Analysis and Investment Decisions, Chi U. Ikoku; John Wiley & Sons, Somerset, NJ 08873; 277 pages, \$34.95 (1985).

Quality Assurance in Process Plant Manufacture, by J. H. Rogerson; Elsevier Publishing Company, 52 Vanderbilt Ave., New York, NY 10017; 159 pages, \$41.25.

High Temperature Heat Exchangers, by Mori, Sheindlin and Afgan, published by Hemisphere Publishing, 79 Madison Ave., New York, NY 10016; 606 pages, \$95.00.

Heat Exchanger Sourcebook, edited by J. W. Palen, published by Hemisphere Publishing, 79 Madison Ave., New York, NY 10016; 805 pages, \$59.95.

Managing Steam: An Engineering Guide to Commercial, Industrial and Utility Systems, edited by Jason Makansi, published by Hemisphere Publishing, 79 Madison Ave., New York, NY 10016; 224 pages, \$37.95.