parts of the book are logically divided into several chapters and each contains an impressive number of solved examples as useful illustrations. The subject matter is dealt with considerable clarity and originality. Each chapter terminates with a selected list of unsolved problems which should prove very useful for the adoption of this book as a text. An added attraction of the book consists in the adoption of SI (Système International d' Unités) system of units. The author is to be congratulated for the job done so well.

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"Wastewater Treatment," Donald W. Sundstrom and Herbert E. Klei, Prentice-Hall, Inc., Englewood Cliffs, NJ, May 1979, 444 pp, $23.

The authors have emphasized basic principles of biological, physical, and chemical unit processes in current use or with future potential. Unlike most introductory texts on wastewater treatment, the coverage reflects a strong chemical engineering approach which is particularly evident in the sections dealing with aeration and mass transfer, biological mechanisms and kinetics, adsorption, and membrane processes. The discussions of unit processes and operations are not tied to specific applications but these are amply available in the literature and the book does not suffer in their absence. The introductory chapter on wastewater characteristics is abbreviated and somewhat lacking perspective of toxic "priority" pollutants, hazardous substances, and appropriate regulatory jargon. The chapter on sludge disposal is too brief considering its relative importance. Gas stripping and solvent extraction could also have received more attention although aeration is well covered. Some mention of relative energy consumptions would have augmented the cost chapter.

The text, equations, and figures and problems are generally well composed and readable. The notation is well explained within the text and summarized *in toto* in a separate appendix. Page or subject references for the lesser known constants and dimensions for other symbols would have been helpful.

Overall the authors have demonstrated their familiarity with both the chemical and environmental engineering literatures. The book can be recommended as a good introductory text on the subject for a senior/first-year graduate course.

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Handbook of Separation Techniques for Chemical Engineers, Philip A. Schweitzer, Editor in Chief; 1,093 pages; $42.50, McGraw-Hill, New York (1979).

This handbook treats the major industrially significant separation techniques. With the exception of ion exchange, the editor has excluded those techniques involving chemical reactions. Thus, the scope of the handbook can be said to include methods for separation of mixtures of gaseous, liquid, and solid components from themselves or from the suspending medium, using thermal or mechanical driving forces.

The theoretical developments of each of the techniques described is limited purposely while the practical application of the techniques is emphasized. The latter is facilitated through the use of appropriate illustrative examples.

Most sections of the book are adequately referenced, and some extensively, for those having need to pursue the techniques in more detail. In many cases the references include appropriate industrial catalogues and publications. Some sections include useful lists of manufacturers of separation equipment.

One is disturbed by the lack of uniformity in the organization of the material. In some sections for example, a tabulation of nomenclature or notation is included at the beginning of the section. This is a useful practice but it is not followed uniformly throughout the book. Some sections include means for judging the economics of the technique, but economic analysis information is sparse and not uniformly presented. There is a lack of uniformity or even-handedness in the treatment of some of the techniques, some sections overdetailed and others significantly abbreviated.

The author does not dwell unduly on theory, and the book can be used and easily understood by any practicing chemical engineer. It will have most value to process and plant engineers, but can also serve as a useful reference for the student and the academic person. For the latter group, it can serve as a useful introduction to the practical state of the art and an introduction to the current literature.

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Fluid Catalytic Cracking with Zeolite Catalysts, Paul B. Venuto and E. Thomas Habib, Jr., Marcel Dekker, Inc., New York, 1979, 156 pages, $19.50.

Research on zeolites opened a new frontier in catalysis. These crystalline aluminosilicates provide high surface areas in uniform molecular-scale pores, allowing shape-selective catalysis (molecular sieving), high activities for hydrocarbon conversions, and new selectivities associated with "solvation" of reactants by the narrow pores. Zeolites revolutionized the technology of gasoline manufacture, saving U.S. refiners some $\$2.5 \times 10^8$/year by the late 1960's; they are now used for cracking of 5×10^6 bbl of oil/day.

This book is a review of the catalytic cracking process, drawing on literature prior to 1978. It was produced directly from a typewritten manuscript and has already appeared in *Catal. Rev.-Sci. Eng.*, **18**, 1 (1978). It is understandable at the elementary undergraduate reaction engineering level, providing an easy-to-read summary and a good introduction for the beginner, who may, however, be slowed a bit by the jargon ("olefinicity," "solid fluid catalyst particles") and acronyms.

The chemistry of the process is stated concisely and conventionally, the reaction engineering qualitatively and naively—apparently for chemists. There is an ample selection of processing data and a thorough qualitative statement of the complex interplay of variables in the process.

The strength of the review is the authenticity and breadth of the process description. Equally reflecting the authors' industrial association, the review catalogs the literature without extending or critically evaluating it. What are the key unresolved issues, research needs, and directions of evolution of the cracking process? What are the catalysts that accelerate CO combustion in the regenerator; how can effects of metals poisoning be minimized; how can one judge what "lumps" are appropriate for process modeling? It is the reader who must locate the cutting edges.

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ERRATA

In the table of contents [*AIChE J.*, **26**, No. 1 (1980)] the authors of "The Influence of Mixing on the Antisolvent Induced Agglomeration and Sedimentation of Mineral Matter in Coal Derived Liquids" should read: K. R. Vaidyanathan, F. H. Verhoff and J. D. Henry, Jr.

In "Sweetening of Sour Natural Gases by Mixed Solvent Absorption: Solubilities of Ethane, Carbon Dioxide, and Hydrogen Sulfide in Mixtures of Physical and Chemical Solvents" by O. R. Rivas and J. M. Prausnitz [*AIChE J.*, **25**, 975 (1979)] the term diglycolamine was improperly used. Diglycolamine® agent of 2 (2-aminoethoxy) ethanol has for many years been, and continues to be, a registered trademark owned and used by Jefferson Chemical Co., Inc.