ization, polymerization under high pressure, and polymerization in a solid state. The chapters on the specific types of polymerization reactions can be read independently after the reader has progressed through the first two introductory chapters.

The text material is well-documented with important references in the field and, in fact, an extensive addendum which contains references published after the text was written is also included.

Experimental techniques for measuring thermodynamic properties and constants are not discussed in detail. Numerous references are given for those readers who are interested in the experimental problems of measuring polymerization thermodynamics. The text does include a great deal of thermodynamic data for a large number of polymer systems. I believe that this book will be a valuable asset to those wishing to learn more about polymerization reactions, and to those who need a ready resource in terms of theory and data for thermodynamic problems associated with polymerization reactions.

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Unit Operations of Chemical Engineering, 3rd Edition, W. L. McCabe and J. C. Smith, McGraw-Hill, New York (1976). 1028 pages. $22.50.

This third edition of a rather standard chemical engineering text continues in the fine tradition of its two earlier editions. It serves well its declared purpose as a beginning text on the unit operations for undergraduate students. This reviewer has also found it useful as an understandable yet thorough introduction to chemical engineering for technical persons not trained therein, e.g., chemists, mechanical engineers.

There are a number of significant additions of new subject matter in this new edition. In the area of mass transfer, I particularly welcome the inclusion of such new topics as liquid-phase activity coefficients, multicomponent-stage operations, batch distillation and steam distillation. I had always deplored the omission of these topics in the earlier edition. The authors do not present many applications of this new material, however. Also, some readers may object to the removal of the K-value charts in this new edition.

Unfortunately, this text suffers the same deficiency that so many others in this area do; namely, such important unit operations as adsorption, dialysis and ion exchange are not treated. The authors' reason for this omission is lack of space. In view of the present size of the text, this is certainly a valid point. It has often occurred to me, however, that the first 16 chapters of the text, which deal with fluid mechanics and heat transfer, could be separated out as a stand-alone text. Indeed, there exist many such adequate texts. Alternately, it seems to this reviewer that much of this material could be condensed significantly. With the addition of the above-mentioned omitted unit operations to the remaining 14 chapters of the text, one would then truly have a comprehensive textbook on the unit operations of chemical engineering.

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Heat Transfer, ,4th Ed., J. P. Holman, McGraw Hill Book Company, 530 pages, price: $17.00.

This is a fine elementary treatment, excellent for a strong first course in heat transfer. Analytical, numerical, and empirical techniques are used to good advantage for a very understandable treatment. The number of problems presented is generous.

In addition to analytical treatment of steady and transient conduction, numerical techniques are also presented. For both forced and natural convection, an integral analysis is given, followed by presentations of empirical results. The nature of thermal radiation is discussed and exchange analysis is by the network method. An introduction to two phase heat transfer systems is given in Chapter 9 on condensation and boiling. The treatment is more abbreviated than one would perhaps wish, but serves as a good starting point. Heat exchanger design presents both the log mean temperature difference and the NTU effectiveness methods. The mass transfer chapter (Ch. 11) is far too brief to be effective. Special topics in Chapter 12 give a helpful introduction to several topics and the final chapter on Heat Transfer in the Environment is timely and undoubtedly will provoke student interest.

The primary set of units used is the SI, with conversion tables given to the English units for those of us who still "think" in the old system.

To restate my initial appraisal: this is an excellent, well put together introductory text on heat transfer. I recommend it.

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ERRATA

In the note "An Empirical Method for Evaluating Critical Molar Volumes" by Alessandro Vetere [*AIChE J.*, **22**, 950-52 (1976)],

1. Equation (6) should read

$$V_c = 33 + \left(\sum_i \Delta v_i M_i \right)^{1.028} \qquad (6)$$

2. In Table 1 the Δv_i value for the functional group —O— (epoxid) should be 0.710 instead of −0.252; $\Delta \nu_i$ should be Δv_i.

3. On page 952 the sentence "Regarding the various classes of compounds . . ." should end as follows: "while Fedors' method furnishes less satisfactory results for hydrocarbons."

In the table of contents [*AIChE J.*, 23, No. 1 (1977)] the author for "Kinetic Behavior of Mixtures with Many First-Order Reactions" should read Hong H. Lee and not J. Hong H. Lee.