ever, references to recent literature are abundant.

Strong points in this book include its coverage of relatively modern developments in polymer science, such as small angle neutron and x-ray scattering, reptation, multicomponent polymers and failure mechanisms; new sets of homework problems; and good illustrations. It has nine chapters covering topics ranging from solution to solid-state structures and properties.

The reader looking for the next Flory will be disappointed; the reader looking for an undergraduate textbook companion to an introductory course will find a strong contender.

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Scaleup of Chemical Processes

Edited by Attilio Bisio and Robert Kabel, John Wiley & Sons, New York, 699 pp., $69.95.

This book may serve as a valuable reference for individuals involved in the scaleup of a specific process but is of questionable value for individuals interested in learning the art of scaleup. In the preface of the book the editors state their assumption that, "few readers will read the entire book at one sitting." This reviewer found those words prophetic as interest in reading the book waned in the initial chapters.

The book is written in 18 chapters by 17 different authors. This approach leads to some chapters that are considerably easier to read than others. For instance, the chapters discussing stagewise and continuous mass transfer processes written by J. R. Fair are an excellent summary of mass transfer calculation techniques, but they have little discussion of scaleup procedures. By contrast, the chapter on mathematical modeling written by D. M. Himmelblau was difficult to read. It contained a series of lists of tasks needed to complete a model with equal emphasis given to the important task of determining the needed accuracy of the model and to the relatively unimportant task of selection of a computer programming language.

The history of process scaleup is rich with successful and not-so-successful examples that illustrate the need to consider factors beyond geometric scaleup. The authors have not used this history to add emphasis and to maintain reader interest. The chapter discussing selection of reactor type by R. L. Kabel makes frequent reference to literature documenting case histories but requires the reader to dig out the original writing.

This is an example of technical writing that is useful primarily to readers already skilled in the art. It contains sufficient detail to be useful in carrying out a specific task, but lacks the overview that would make it useful as a learning tool.

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Computer Aided Chemical Thermodynamics of Gases and Liquids: Theory, Models, Programs

By Paul Benedek and Ferenc Olti, Wiley Interscience, 731 pp., $85.00.

Computer Aided Chemical Thermodynamics is an attempt to present the subject of thermodynamics in a way that takes advantage of the proliferation of personal computers. This necessarily allows one to cover a wide variety of problems that are too complex or tedious for hand calculations. Such an approach is particularly appropriate in thermodynamics as one often encounters trial and error solutions.

The book is informally divided into four sections. The first presents the elements of classical and quantum mechanics. The second section introduces the concepts of temperature, pressure, and energy, including equations of state and the Zeroth and First Laws of Thermodynamics. The third section introduces entropy, the Second Law, and the remaining thermodynamic variables. This section also presents an introduction to statistical thermodynamics; throughout the book, concepts of molecular thermodynamics are used to emphasize similarities and differences in behavior. The fourth section presents specific models and shows how they can be used to calculate thermodynamic properties for pure substances and for mixtures.

In general, I liked the order, organization, and emphasis placed on the various sections. The authors tend to present the material as statements of fact rather than in a didactic fashion and hence, coupled with the fact that there are no example problems or homework problems, the book is more suitable as a handbook for working engineers than as a textbook. Though I did not object to this aspect of the authors' style, the authors, editors, and reviewers seem to have done a rather poor job in preparing this book for publication. The book obviously was written by people who are not fluent in English; at places the language detracts significantly from the flow of ideas. Further, because of the rather officious style, the authors often make statements in a tone that implies they are general when they are not. For example, they state that the reduced second virial coefficient is a universal function of reduced temperature (which it is not), and that arithmetic mean mixing rule for 'b' in van der Waals' equation leads to mixing without change in volume (which it does not). Also, there are statements that are wrong, e.g. a statement that pure substances or mixtures of hard spheres behave as ideal gases.

Given the amount of misinformation, misleading information, and the difficulty I had reading this book, I cannot recommend that anyone purchase it.

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