to 117 companies and foundations. In March of 1981 proposals were mailed to an additional 14 foundations. The total support required is estimated to be $123,000. At the present time, 53 companies have responded and 19 have pledged or contributed approximately $73,000. The Organizing Committee is particularly anxious to know of additional firms or foundations who may have an interest in supporting this educational program. If you have any suggestions concerning key contacts, please call T. W. F. Russell (302) 995-7155 to discuss how these individuals and their organizations should be contacted.

The estimated budget accounts for preliminary operating expenses; travel and living expenses for members of the Organizing Committee, workship coordinators and leaders; special events; and partial travel and living subsidy for university participants. There is no compensation for instructional services. Members of the Organizing, coordinators and leaders of workshops, as well as their institutions, donate their services.

Each department of chemical engineering will be offered partial subsidy for one faculty member to attend the Summer School. Large departments will be offered an opportunity for a second faculty member to participate. Department heads will be asked to name attendees from their department. Industrial sponsors will also be invited to select one or two attendees from their company.

For more information or copies of the 1982 Summer School for Chemical Engineering Faculty Proposal to Industry, please contact T. W. F. Russell, Co-Chairman Institute of Energy Conversion University of Delaware One Pike Creek Center Wilmington, DE 19808.

ChE book reviews

LIQUIDS AND THEIR PROPERTIES: A MOLECULAR AND MACROSCOPIC TREATISE WITH APPLICATIONS

By H. N. V. Temperley and D. H. Trevena
John Wiley & Sons, New York, 1978

Reviewed by Keith E. Gubbins
Cornell University

This book gives an elementary account of both the molecular and macroscopic approaches to liquids, and will be most useful to nonspecialists who want an overview of the subject. The authors do not assume any significant prior knowledge of statistical mechanics or fluid mechanics, and the book is interesting and easy to read.

The first chapter gives a historical survey, and includes photographs of Kirkwood, van der Waals, Bernoulli and Berthelot. This is followed by three chapters on the intermolecular forces and statistical mechanical theories of liquids. A brief account of each theoretical approach is given, stressing the physical ideas without giving detailed derivations. The chapters which follow focus on particular applications, and are the most interesting and unusual feature of the book. They include discussions of phase transitions, hydrodynamics, acoustics, surface waves, ultrasonic waves, liquids under tension and compression, surface phenomena, liquid structure, mixtures, transport processes, non-Newtonian liquids, and liquid helium. The treatment of these subjects is at an elementary and largely qualitative level. In Chapter 8 the authors adopt the novel approach of dealing at length with liquids under negative pressure (i.e. tension) before discussing the effects of positive pressure! The authors' research has contributed to our knowledge of liquids under tension, and it is because of Berthelot's early experiments on this subject that his photograph is included in the historical chapter.

While valuable as an introduction for nonspecialists, this book is less suitable to those readers interested in a deeper treatment. Many topics are introduced in a rather cursory way and equations are presented without detailed proofs. The theories given are not always up-to-date. Thus, no mention is made of either perturbation theory or the more modern versions of conformal solution theory (e.g. van der Waals 1 theory) and integral equation theory. The chapter on mixtures deals almost entirely with the cell model approach, now largely abandoned by theorists in favor of the more powerful conformal solution and perturbation theory methods. The book is reasonably free from errors, although I did note a few. Thus one cannot study either the mean kinetic energy or nonequilibrium processes by the Monte Carlo method (p. 195), and the treatment of electrostatic forces in terms of angle averaged models is an oversimplification for most polar liquids. Nevertheless, these flaws are relatively minor, and many chemical engineers will appreciate the inclusion of such topics as hydrodynamics, non-Newtonian fluids, and cavitation. □