

## Book Reviews

**Introduction to Physical Polymer Science.** By L. H. Sperling. John Wiley & Sons, 1986. xxi + 439 pp. Price: £36.25.

Many scientific books may be categorized as the work of an expert researcher analyzing, reviewing and recording the minutiae of a subject. Other books bear the mark of the teacher where the problems, pain and triumphs of stimulating a class of students, as well as organizing and presenting the material, have provided a formidable task. Such an exercise has usually necessitated the thorough digestion of a subject.

The above book falls into the latter category. Ideas and concepts are as important as recondite detail though the latter is accessible through a comprehensive list of references at the end of each chapter. The book is notable for the lucidity of its presentation and for the author's knack of explaining the concepts qualitatively as well as expressing them mathematically. Though the coverage is almost entirely confined to the synthetic polymers, the ideas and techniques are, for the most part, relevant and applicable to carbohydrate polymers.

After a qualitative introduction, the author launches into a brief account of chain structure and configuration, then molecular weights and sizes, followed by solution and phase behaviour, the bulk state, the glass-rubber transition, rubber elasticity, polymer viscoelasticity and flow and finally the mechanical behaviour of polymers. For the most part, descriptions of physical techniques are intercalated where appropriate with these topics.

The casual reader of this review might be forgiven in asking what merit this book has over others on this general area. In addition to lucidity, there is a particularly welcome feature for both reader and student, namely the problems and detailed suggestions for laboratory demonstrations and experiments given at the end of each chapter.

Here is a book that every teacher involved in this area will want to read (and probably purchase), while every student of this field, either professional or compulsive, will benefit from using as a textbook.

**J. M. V. Blanshard**