but not improved. The range of machinery discussed is smaller and mention of high shear rate mixers virtually eliminated. This seems to overlook the widespread use of such methods in the manufacture of many types of inks. It would be an exaggeration to say that it is essential for all owners of the first edition to change it for a copy of the third, but nevertheless anyone wishing to understand and engage in the practice of pigment dispersion should have a copy readily to hand. It remains the best book on the subject.

David Patterson

Developments in Polymer Photochemistry—3. Edited by N.S. Allen. Applied Science Publishers Ltd, London. 1982. 353 pp. ISBN 0-85334-978-9. Price: £40·00.

My first reaction to the price of this book was one of discomfort. However, considering the length and high quality of the contents, I am happy to conclude that the text represents value for money. It is clearly printed and reasonably free from trivial errors.

This book is the third in a succession of texts within this developments series. As such, we are offered eight chapters of varying length, each being self-contained with a prolific and up-to-date bibliography.

The first chapter (by V. D. McGinniss, on Aromatic Carbonyl and Alkyl-Phenyl Ketone Photoinitiation, 52 pages, 108 references) provides a detailed insight into photoactive catalyst molecules designed for the photopolymerisation of vinyl and acrylic monomers. The approach is kinetic and mechanistic in style and is thorough in its consideration of fundamental principles.

Chapter 2 (S. Tazuke, Photocrosslinking of Polymers, 48 pages, 132 references) is a gem. It contains details of both the basic and the applied aspects of the photocrosslinking of polymers, in review style. In addition to conventional bond forming reactions, crosslinking by cationic mechanisms is discussed and the various photocurable functional groups are tabulated. The effect of photocrosslinking on various physical properties is given detailed scrutiny. This leads to suggestions of new methodology for the design of specific photopolymers, based on an understanding of the polymer structure–polymer functionality correlation.

In Chapter 3 (Y. Takai and M. Ieda, Photoconduction Processes in Polymers, 30 pages, 117 references) we are treated to a consideration of

various photoconduction processes, including photogeneration and transport in a variety of polymeric systems. These are studied in the wavelength range from vacuum ultraviolet to infrared, depending on the photon energy. Carrier transport in polymers is discussed in terms of both intermolecular and intramolecular events.

The approach used in Chapter 4 (I. Soutar, Studies of Macromolecular Behaviour by Polarized Photoselection Techniques, 38 pages, 140 references) is more academic than that in any of the other chapters. In this chapter, the applications of luminescence depolarisation techniques to investigations of macromolecular mobility in solution and bulk phases are reviewed, together with aspects of energy transfer and migration in synthetic polymers.

Chapter 5 (E. D. Owen, Photodegradation and Stabilization of PVC, 42 pages, 104 references) marks the beginning of change in character of the text in that, as in Chapters 6–8, emphasis is placed on practical, rather than academic, points. Owen has chosen an important problem and highlights various solutions. Stabilisers which are currently used in commercial PVC formulations are described and the suggested mechanisms by which they operate are outlined.

This theme is continued in Chapter 6 (Z. Osawa, Photodegradation and Stabilization of Polyurethanes, 27 pages, 32 references). The approach is firmly placed on attempts at understanding the photodegradation process of various types of polyurethane system via studies of changes in physical properties of the substrates, rather than on routes to stabilisation.

In Chapter 7 (W. Schnabel, Laser Flash Photolysis of Polymers, 49 pages, 113 references), the author has successfully avoided the temptation of supplying an academic text. The article is restricted exclusively to investigations carried out on polymeric materials. Apart from a short description of the experimental technique, the text deals with the use of flash photolysis to solve problems related to the photolytic behaviour of polymers. Aspects of the English are a little tortured, but do not detract too severely from the value of the contents.

Chapter 8 (W. B. Hardy, Commercial Aspects of Polymer Photostabilization, 59 pages, 123 references) represents the high point in a commendable text. In a clear, lucid style the author gives us an up-to-date account of the state of the art from a commercial standpoint. Information normally difficult to acquire is provided in abundance. The approach considers both theoretical and practical points of stabilising

plastics against degradation by ultraviolet light. Estimates of worldwide consumption of the more important polymers, together with the amount and type of stabilisers sold for use in these polymers, are provided.

If this review appears enthusiastic, so be it. The text will provide excellent, informative reading for all those who have an interest in polymer photochemistry.

J. T. Guthrie