

dominates thermodynamics at all the important moments in membrane formation. This chapter also contains a brief account of thin-film composite membranes.

Finally, three short chapters deal with membranes made from pure polymers by mechanical processing and track etching, liquid and dynamic membranes, and biological membranes leading up to polymerized vesicles.

The book is well produced and has a subject index only. It would have benefited by having a section describing the technology of membrane production on the industrial scale. Space could have been made for this by omitting the sections relating to ion-exchange membranes and their uses. They are better treated in other books.

Despite these comments the hard work of Dr Kesting has put in to update his first book should be welcomed by all membrane scientists who will deprive only themselves if they do not take full advantage of its many virtues.

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Encyclopedia of Polymer Science and Engineering

J. I. Kroschwitz, H. F. Mark,
N. Bikales, C. G. Overberger
and G. Menges (Eds.)
John Wiley and Sons, New
York, 1985, 906 pages,
US\$240, £170,
ISBN 0-471-89540-7

Some 23 years have elapsed since the initial publication of this multi-volumed work, and the appearance of a new edition is a major event in polymer science.

This encyclopedia has been the major reference work on polymers for the past two decades, and the new edition, which has been completely rewritten and extended, reflects the great changes that have occurred. The encyclopedia will remain the prime reference work on polymers and their technology and engineering applications. The new edition will comprise 19 volumes of about 850 pages each, and the series is scheduled to be completed by mid-1989.

The topics in the first volume – A to amorphous polymers – include many articles of major interest to both polymer scientists and technologists. A few of the many outstanding articles that may be selected for their special interests are: abrasion and wear; acetal resins; acoustic properties; acrylic polymers, elastomers and fibres (270 pages); acrylonitrile polymers (182 pages); adhesion and adhesives (100 pages) and amorphous polymers (182 pages).

The standard of the individual articles – some of which rank as the equivalent of a text book in size and content – is uniformly excellent, and all are authoritative and well produced. The volume as a whole is very satisfactory, and will undoubtedly grow in usefulness with the publication of subsequent volumes.

This series will undoubtedly be a welcome, valuable, and essential addition to all scientific and industrial libraries.

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Polymer Products: Design, Materials and Processing

D. H. Morton-Jones and
J. W. Ellis

Chapman & Hall Ltd., London,
1986, xvi + 345 pages, £19.95,
ISBN 0-412-27130-3

The aim of this book is to introduce students to many aspects of polymer engineering by the novel use of actual illustrative examples. Case studies of successful products are presented, which include details of design, the selection of materials and the manufacturing process. It is hoped that difficult concepts introduced by means of relevant practical applications will be easier for students to grasp.

The book derives from a project undertaken at the University of Lancaster and is one of a number of initiatives taken by the SERC to integrate more fully academe and industry, a weakness in Britain highlighted by the Finniston Report. It is all too easy for lecturers, particularly those who have themselves become remote from industry, to resort to theoretical rather than applied topics. Furthermore, most students find it easier to become skilled in reproducing and manipulating mathematical proofs than tackling real technological problems. Such circumstances can lead to a rather undemanding educational process, but which is apparently cloaked in academic respectability. By providing this collection of case histories both the authors and the sponsoring body clearly hope to break the mould and encourage the development of problem-solving skills.

Altogether there are some two dozen case histories of very varying nature. They include the design of injection-moulded clips and gear wheels, a washing

machine tank made from glass-coupled polypropylene structural foam, printed gaskets for hydraulic control equipment, a high-speed train cab, DMC vehicle headlamps, a mine belt 28.8 km in circumference, a blow-moulded acid container and heat shrinkable terminations for cables. A wide variety of polymer processes are encountered, whilst many facets of polymer science as well as conventional chemistry, physics and engineering are invoked.

Very sensibly, the authors have grouped the case histories, for example, the first group all involve injection moulding, the second are all foam core mouldings, and the fourth glass-reinforced plastics. Each collection is preceded by a short chapter outlining relevant aspects of polymer science and technology. One of my few criticisms is that of necessity such outlines are very brief and I believe that the more inquisitive reader would appreciate more references to detailed background reading.

Sometimes I found it rather difficult to follow the written description of a process or product and a few more illustrations should have made things clearer. My uncertainty here is that I found some of the diagrams confusing. For example, the homofocal lamp drawings on pp. 202–3 left me quite baffled.

Notwithstanding these criticisms I believe that the authors are to be congratulated on their contribution to the literature, and one can only hope that this turns out to be only the first of a series of similar publications.

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Polymer Science and Technology, Vol. 32: Polymeric Materials in Medication

C. G. Gebelein and
C. E. Carraher, Jr (Eds.)
Plenum Press, New York,
1985, viii + 302 pages,
US\$63, £39.38,
ISBN 0-306-42115-1

This book is based on the proceedings of an ACS Polymer Materials Division Symposium and comprises 22 chapters. An index and full details of contributions are included.

Beginning with methodologies (Gebelein) and body tissue reactions (Marchant & Anderson) the reader is prepared for the remainder of applications chapters. The introductory chapter is a useful outline of systems in vogue. The chapter from Marchant and