Book Reviews

Cationic Polymerization of Olefins: A Critical Inventory

J. P. Kennedy

Wiley–Interscience, New York, 1975, pp 337, £12.15

As the title suggests, this book consists mainly of a catalogue of all known reports of the cationic polymerization (or more usually oligomerization) of a very large number of aliphatic and aromatic olefins. Reactive olefins having heteroatom substituents at the double bond, such as alkylvinyl ethers, are omitted from the compilation. Not surprisingly, in view of the author's many original contributions, there are extensive accounts of the cationic polymerization and copolymerizations of isobutylene, conjugated dienes, and styrene and useful summaries of the various types of isomerization–polymerization prevalent in homopolymerization of simple alkenes. Mechanistic interpretations are included where appropriate, and the systematic compilation is prefaced by a short, but interesting historical survey of the development of cationic polymerization.

In total this inventory is an extremely convenient and useful reference source which is very well organized and presented. It is to be recommended equally to both polymer chemists and those interested in the more general reactions of carbocations.

A. Ledwith

Structure of Fibrous Biopolymers

Edited by E.D.T. Atkins and A. Keller

Butterworth, London, 1975 437 pp. £16.00

This is an account of the Proceedings of the 26th Symposium of the Colston Research Society held at the University of Bristol in April 1974. There are 25 contributed articles ranging in length from about 5 to 35 pages. The book is devoted almost entirely to studies on polysaccharides and collagen with just two articles outside these fields; a good short review of structural studies on keratin, and a brief account of electron diffraction studies on synthetic sequential polypeptides.

The multidisciplinary approach is emphasized, with articles on chemical studies, optical and electron microscopy, spectroscopy and diffraction. The range of disciplines is nicely paralleled by the heirarchy of structural levels described. Many of the contributions are very readable short reviews which set the scene for the more detailed accounts. In addition to the expected articles on the structure and function of particular connective tissue and plant cell wall polysaccharides, and collagen, there are contributions concerned with more general studies of the intercellular work and polypeptide–polysaccharide interactions, and with the ageing and 'crimping' of tendon collagen.

Of the notable recent advances in the field I have followed three with some interest: the determination of the structures of connective tissue polysaccharides stemming from the breakthrough in achieving extremely well-oriented fibres; the very precise descriptions of a number of plant polysaccharides, again mostly due to improved diffraction studies; the knowledge of the 3-dimensional molecular packing of collagen, resulting from the application of amino-acid sqquence information to the results of electron microscopy and X-ray diffraction. It is pleasing to see the recent findings of the groups most intimately involved in these studies collected together in this one volume.

40 pages or so are devoted to the discussions which followed the conference presentations. These were, of course, unprepared and often loosely worded. In a book of this price I would have preferred these issues to have been more tightly considered in the main body of the articles. It was sometimes frustrating to see references to photographic slides which have not been reproduced in the book.

In summary, the quality of reproduction of the numerous electron micrographs and X-ray diffraction photographs is excellent and the subject matter is liberally illustrated with line diagrams. The book is strongly recommended to all those involved in biopolymer research, whether academic, medical, or industrial. No doubt much of the information it contains will soon be embodied in college texts.

A. Geddes

Adhesives – Recent Developments

Bernard S. Herman

Noyes Data Corporation, Park Ridge, New Jersey, 1976, 302 pp. $32.00

In the foreword, it is claimed that this book serves a double purpose. In the first place, it is intended to supply detailed technical information relating to the technology of adhesives. Secondly, it is intended to be used as a guide to the US patent literature in this field. The source of the information given is US patents concerned with the technology of adhesives and issued since 1974. The claim is made that the US patent literature is the largest and most comprehensive collection of technical information in the world. Whilst some readers will be inclined to doubt the claim that 'The technical information obtained from a patent is extremely reliable and comprehensive', none-the-less both the author and the publisher of this book are to be commended for reminding us that the patent literature discloses a substantial amount of information which is not available in the journal literature, and which therefore is overlooked by those who rely primarily on the journal literature.

The book is divided into seven sections, entitled respectively: Pressure Sensitive Adhesives, Hot Melt Adhesives, Ply Wood, Particle Board and Paper Adhesives, Textile Adhesives and Plastics Bonding, Rubber Adhesion, Metal-to-Metal Adhesion, and Speciality Applications. These are prefaced by a very brief introduction, which emphasizes that, over the next decade, solvent-based adhesives may be replaced to an important extent by alteratives such as two-component reactive adhesives, hot melt, photoreactive, and water-based systems. The book concludes with a company index, and inventor index, and a US patent number index, all, of course, relating to the patents to which attention is drawn in the body of the main text.

This book could not be recommended to students and others who are seeking a broad introductory review of the technology of adhesives. It makes no claims to be intended for such readers; indeed, its content is accurately summarized by its title. It will undoubtedly be found to be extremely useful to specialists working in the adhesives industry, and also probably to many who find it necessary to deal with the applications of adhesives. An attempt has been made to indicate for each patent all the information that is significant, and to eliminate legal jargon and juristic phraseolgy. Examination of the text indicates that these objectives have largely been fulfilled. What is not clear from the text, however, is the extent to which independent efforts have been made to verify the claims which are made in the various patents, and which are reproduced here. In particular, it would have been helpful to have had an indication of which of the many patent examples cited have in fact been subjected to independent scrutiny, and with what result. One suspects that none of the examples and claims have been subjected to scrutiny of the kind suggested. If this is the case, then an unequivocal statement to this effect should appear in a prominent place in the book. As far as your reviewer can see, no such statement does appear. Thus, whereas the claim is made that this book presents an advanced, technically-orientated review of recent developments in the adhesives industry, it would perhaps be more proper to say this book presents an advanced, technically-orientated review of the *literature* pertaining to recent developments in the adhesives industry. Furthermore, it appears that the review of literature is essentially uncritical in the sense that no attempt is made to discuss the plausibility of the various claims and processes described, nor their relationships to other claims and processes which appear elsewhere in the review.

Notwithstanding the critisisms contained in the previous paragraph, there is little doubt that this comprehensive review of recent patent literature pertaining to adhesives technology will be found to be extremely useful to all who are working in this field.

D. C. Blackley

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