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Book reviews

Properties of Ionic Polymers — Natural and Synthetic. Edited by L. Salmen and M. Htun, Swedish Pulp and Paper Research Institute, Stockholm, 1991. vi + 300 pp. Price Sek 600, US$100. ISBN 0348-2650.

Broadly speaking there are two groups of researchers interested in the ionic behaviour of wood: the wood scientists and the scientists involved in the research of ionomers, membranes and polyelectrolytes. As often happens in the scientific community, there is little cross-over, interdisciplinary research between these two groups, and yet each possesses knowledge of great value and interest to the other. In order to bring forward all this information a workshop was held in Stockholm which brought both wood scientists and ionomer, membrane and polyelectrolyte scientists together. Topics covered included Ion selectivity/Ion exchange, Polyelectrolytes/Gel Swelling and Mechanical and Softening Properties. Each topic included papers presented from a wood viewpoint and papers whose emphasis is on polymer science.

This is a good, concise volume consisting of a number of outstanding papers covering each of the viewpoints outlined above. Herein, however, lies the obvious problem. The information is still presented from a polar viewpoint, either as a wood paper or as a polymer paper. Far from bringing all of the information together, the volume has managed to keep all of the information apart. We feel that the wood scientists will only read the wood sections of the book, whilst the polymer scientists will be most interested in the polymer sections. This is a clear case where a complete re-write of all of the information in the form of a book, as opposed to a number of papers, would have been advantageous to the reader. Not an easy task, but a great opportunity for the writer who aspires to it. As it stands, however, 'Properties of Ionic Polymers' is an interesting volume for people interested in the two fields, but one feels that it is a missed opportunity to produce an excellent book.

John F. Kennedy
David W. Taylor

Oxidative Enzymes in Foods. Edited by D.S. Robinson and N.A.M. Eskin, Eslevier Applied Science, London, 1991. x + 316 pp. Price £66-00/US$112-00. ISBN 1-85166-613-3.

Enzymes have found numerous applications in the food, medical (diagnostic), chemical and pharmaceutical industries. By far the greatest commercial use of biocatalysts has been in the food and beverage industry. Centuries of producing foods through biological processes (e.g. cheese, yoghurt, beer, wine, etc.), have left an indelible mark on food processing.

The use of enzymes in food is not restricted to fermentation processes. Enzymes may be used to improve the nutritional properties of food, as digestion aids and for the removal of unwanted components.

The nutrient composition of a food depends on the raw material, as well as on the effects of processing and storage. During storage and transportation, oxidative enzymes present in food quickly reduce their quality and frequently give undesirable flavours and odours.

'Oxidative Enzymes in Foods' presents a practical overview of the major oxidative enzymes affecting food quality and stability. Enzymes covered include peroxidase, superoxide dismutase, lipoxygenase, polyphenol oxidases, amino acid oxidases, carbohydrate oxidases and lactoperoxidase. Chapter authors present a concise coverage on occurrence and distribution, molecular structure, oxidative reaction, functions, as well as the latest developments, including application in biotechnology and genetic engineering of these enzymes.

The book has been well edited and an extensive range of literature is represented. In essence, this is a good source of information and supplementary reading for researchers and students in many fields in which oxidative enzymes are important.

Zilda M.B. Figueiredo
John F. Kennedy

Biotechnology in Pulp and Paper Manufacture: Applications and Fundamental Investigations. Edited by T.K. Kirk and H.M. Chang, Butterworth-Heinemann, London, 1990. xxviii + 66 pp. Price £57-00. ISBN 0-409-90192-X

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In wood fibre production, along with many other fields, biotechnology is having a major effect on the quality, availability, production and cost of several aspects. For example, pulp manufacture, bleaching, fibre recycling, by-product conversion and new waste treatments have all been improved, enhanced or invented by a biotechnological method. The prospects for improvements are themselves great, and a large number of laboratories around the world are involved in research into these new techniques along with the underlying fundamental research. It is the cream of this research which 'Biotechnology in Pulp and Paper Manufacture' aims to summarise. The summary is provided in the form of sixty-eight chapters comprising individual papers on relevant and topical subjects. These papers were selected from an International Symposium on the subject held in the United States. The chapters are divided into seven sections so that all the relevant papers are presented together. There is also an excellent overview section which helps to gel all of the information together by providing a clear overall picture of the state of the field as it stands.

Overall, 'Biotechnology in Pulp and Paper Manufacture' is a fair appraisal of the state of knowledge in wood fibre production from a biotechnological viewpoint. The lack of an index is annoying, and some of the internal presentation appears rushed. The book proudly states that it is the 'first on the subject', perhaps if a little more effort had been put into the presentation, they could have stated that it was the best. We could only recommend this volume as a library loan, which is a shame because there is valuable information within the pages if only it was more accessible.

John F. Kennedy
David W. Taylor