

## Book reviews

**Xylans and Xylanases.** Edited by J. Visser, G. Beldman, M.A. Kusters-van Someren and A.G.J. Voragen, Elsevier, Amsterdam. xiii + 576 pp. Price US\$208.50. ISBN 0-444-89477-2/1992.

Xylans, which are non-cellulose complex polysaccharides from plant cell walls, and xylanases, which can degrade xylans, have been highlighted, in recent years, as they have been recognised as important types of applied polysaccharide chemicals. There are many diverse types, the compositions and structure of which are now being elucidated. Xylanases are destined to play a crucial role in the biological and enzymatic treatment of lignocellulosic resources such as in biological pulping and the application of lignocellulosic resources in diet. However, there are relatively few references to xylans and xylanases compared with cellulose and cellulases, though they may be vital.

*Xylans and Xylanases*, as the seventh volume of the series *Progress in Biotechnology*, offers a collection of lectures and short contributions based on posters presented at the International Symposium on Xylans and Xylanases, organised in The Netherlands, and consists of six chapters. The structure, physical and chemical properties of xylans are focused on in the first chapter. The identification, mode of action and chemical properties of xylans are the topics considered in the second chapter. Accessory enzymes in xylan degradation and molecular genetics and regulation of xylanase biosynthesis in microbial systems are covered in both the third and fourth chapters, respectively. Studies regarding the application of xylanases in food, feed and wood technology are reported in the fifth chapter. Short communications based on poster presentations (45 papers) are collected in the last chapter, which covers all sorts of research activities for xylans and xylanases. In particular, it is noteworthy that a large number of studies throughout this book cover the diversity between species, genetics, kinetics and industrial applications of xylanases.

This book is timely for those wishing to know the front line of studies on xylans and xylanases and is recommended to all researchers involved in any form of cellulose and lignocellulose applied chemistry.

John F. Kennedy  
Jiro Shimizu

**Chemically Modified Surfaces.** Edited by Joseph J. Pesek and Ivan E. Leigh, Royal Society of Chemistry. xii + 224 pp. Price £49.50.

Surface chemistry has become of great importance, particularly as the advantages of having greater areas of reactive surfaces compared with dense homogeneous materials, are becoming increasingly realised. The range of materials on which surface modifications can be accomplished is expanding, as is the range of methods by which surfaces can be modified chemically and this has produced an increase in the type of techniques for studying them.

*Chemically Modified Surfaces*, compiled from the Fifth Symposium held in Malvern, Pennsylvania, USA, is a presentation of new scientific contributions on the chemical modification of different materials, surface characterisation, and other topics of current interest in this area. The book thoroughly covers the spectrum of chemically modified surfaces while also being extremely specialist in each topic. For a chemist interested in one particular topic, it is very detailed, explanatory and precise. For anyone interested in the general chemistry of modified surfaces, it covers a vast area of this subject.

While including the traditional topics, the book also covers industrial applications of surface modifications, i.e. conversion of oxide to hydride surfaces, modifications of polymer surfaces, modification and characterisation of catalysts, and surface studies on membranes and thin films.

An expanse of topics are covered from Catalysts For The Environment, Control Mechanism of Surfactant-Assisted Increase In Coal Liquefaction Yields, to New Methodology For Grafting of Polymer Surfaces. Surface grafting is a polymerisation that incorporates an additional monomer from solution to form a second covalently bonded surface polymer phase. Existing methodology for grafting is based predominantly on radical polymerisations. New grafting chemistry involves new synthetic approaches to grafting onto polyethylene surfaces, and grafting using an impregnated catalyst. Thermal Stabilisation Of Enzymes Through Surface Attachment by Covalently Bonded Phospholipids, Surface Chemistry Of Microporous Manganese Oxides, High Temperature Sorbents For Oxygen Supported On Platinum Modified Zeolites looks at the role of platinum in the reduction of metals like cobalt and copper when added to zeolite by ion exchange.

While considering the physical chemistry aspect, it also covers characterising chemical modifications of surfaces, including magnetic resonance, infra-red spectroscopy, X-ray, photoelectron spectroscopy and also presentation of new scientific contributions in this area.