reference guide and training tool for the student, e.g. post-graduate, experienced researcher and new-comer to the field.

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Separation Processes in the Food and Biotechnology Industries: Principles and Applications. A.S. Grandison and M.J. Lewis (eds.), Woodhead Publishing Limited, Cambridge, 1996, xii + 290 pp., price £85.00, ISBN 1 85573 287 4

Separation of one or more components from a complex mixture is a requirement for many operations in the food and biotechnology industries. The separations in question range from particulate materials down to small molecules. The separations usually aim to achieve removal of specific components, in order to increase the added value of the products, which may be the residue, the extracted components or both. All separations rely on exploiting differences in physical or chemical properties of the mixture of components. Some of the more common properties involved in separation processes are particle or molecular size and shape density, solubility, and electrostatic charge.

This book concentrates on the more recent methods and techniques for separating food components and products of the biotechnology industry. Each chapter covers a specific type or area of application and includes on the basic principles, industrial equipment available, commercial applications and an overview of current research and development. There are nine chapters: the first is an overview of separation processes and the others focus on supercritical fluid extraction, pressure-activated membrane processes, ultrafiltration, microfiltration, ion-exchange and electrodialysis, innovative separation methods in bioprocessing, fractionation of fat, and solids separation processes.

This book provides an interesting and up-to-date coverage of the subject and is a useful reference for researchers working in this field.

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Hydrogels and Biodegradable Polymers for Bioapplications – ACS Symposium Series No. 627. R.M. Ottenbrite, S.J. Huang and K. Park (eds.), American Chemical Society, Washington, D.C., 1996, x + 268 pp., price $99.95, ISBN 0-8412-3400-0

Many new areas of polymer science have been successfully developed over recent years. One such growth area is undoubtedly the development of potentially biodegradable polymeric materials, which can play an important role in many applications, ranging from the synthesis of 'environmentally friendly' packaging materials to slow release drug delivery carriers that undergo a predetermined rate of hydrolysis *in vivo* to provide a time- (and often hence location-) controlled dose of a biologically active agent.

As the title suggests, the main focus of the symposium upon which this volume is based was the biodegradation of hydrogels and hydrogel bioapplications. Hydrogels are formed by adding a small amount of cross-linked macromolecular material to a relatively large amount of water, producing a somewhat gelatinous solid. The development of such technologies into commercially viable biomedical products is of major interest to many individuals and companies. Research into hydrogels has generally been geared toward biomedical applications due to their relatively high biocompatibility, and their hydrophilic nature and large swelling capabilities were originally explored.

'Hydrogels and Biodegradable Polymers for Bioapplications' is broadly split into three sections, namely hydrogels in biosystems; biodegradation; and bioapplications, and addresses reversible hydrogels, stimuli-sensitive hydrogels, and some *in vivo* applications of hydrogels. The use of hydrogels in biosystems includes such topics as the synthesis of a novel hydrogel which undergoes sol–gel phase transformation by changes in the glucose concentration of the surrounding medium, the preparation of a bioartificial hydrogel by cross-linking activated poly(ethylene glycol) with bovine serum albumin, and its subsequent use as a matrix for the immobilisation of acid phosphatase and asparaginase, and the *in vivo* bioactivities of sulfonylurea-grafted polymers for Langerhans islet stimulation in rats.

Chapters are also presented on the biodegradation of poly-(L-lactic acid-co-amino acid) graft copolymers, peroxide stabilised poly(L-lactide), polycarboxylates, protein–starch plastics, and include the activities of depolymerases on polyhydroxyalkanoates which have received considerable attention as biodegradable, biocompatible thermoplastics. Discussion of bioactive polymeric dental materials based on amorphous calcium phosphate is also presented.

The purpose of the ACS Symposium Series is to publish comprehensive volumes based on recent symposia that provide up-to-date information on a specific topic in the form of original current research papers and relevant original review material. This volume certainly lives up to such intended aims and provides its audience with a well presented and extremely informative treatise into the rapidly growing field of biocompatible and biodegradable polymeric materials, and is thus highly recommended to anyone with interests in biopolymers, biomaterials science and biomedical applications.

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