

cultivation, and scale-up of these cells, with examples of both their industrial application and their future potential. Special emphasis is given to solve the critical issues encountered during the discovery of new drugs, process development, and the manufacture of new and existing compounds. Other topics include recombinant protein expression, bioinformatics, high throughput screening, analytical tools in biotechnology, DNA shuffling, and genomic discovery. The authors all have proven track records in the successful implementation of commercial-scale processes.

This Handbook will prove especially useful not only to those involved in biotechnology as a broad discipline, but also assist experienced practitioners in perfecting the special art of the industrial cell culture. Many scientists currently in the field find their carriers transitioning across work with mammalian, microbial, and plant bioprocesses; thus they are very much in need of a book linking these disciplines in a single format, which may be also suitable for teaching.

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Severian Durmitriu, Polysaccharides, Structural Diversity and Functional Versatility, 2nd ed. University of Sherbrooke/Marcel Dekker, Quebec, Canada/New York, USA, 2005 (xvii + 1204pp., £155.00, ISBN 0-8247-5480-8)

Polysaccharides are the macromolecules that belong to the means components of life. Together with nucleic acids and proteins, the polysaccharides determine the functionality and specificity of the species. Oligosaccharides and polysaccharides are biopolymers commonly found in living organism, and are known to reveal the physiological functions by forming a specific conformation.

Polysaccharides have received little such promotion even though they are widely distributed throughout nature and highly organized structure. In this way, polysaccharides as natural polymers are by far the most abundant renewable resource. In contrast to petroleum-based synthetic polymers, plant polysaccharides are sustainable materials synthesized by the sun's energy and fully biodegradable in the original states. Thus, with decreasing supply of oil resources polysaccharides, including

cellulose, starch, chitin, storage polysaccharides, are expected to play an increasingly important role in industrial use.

However, our understanding of polysaccharide chains is still in its premature state with respect to their structure in solid and in solution. Structural analysis may offer the most fundamental knowledge to understand the functions of polysaccharides, but the diversity and irregularity of polysaccharides chains make a formidable task.

Completely revised and expanded to reflect the latest advancements in the field, *Polysaccharides* presents state-of-the-art polysaccharides research from different aspects regarding the macromolecular variety, function, chemistry, structure and stability in just one volume. This second edition outlines are the most complete summary now available of the present knowledge of polysaccharide chemistry. This work reveals new analytical techniques and applications currently impacting the cosmetic, medicinal, chemical, and biochemical industries.

This authoritative book discusses some fundamental aspects of polysaccharides as: progress in structural characterization, conformation and dynamic aspects of polysaccharides gels, rheological behaviour of polysaccharides in aqueous systems, biosynthesis, structure and physical properties of bacterial polysaccharides, renewable resources, new applications of polysaccharides and the incorporation of the polysaccharides in the synthetic matrix. Just one point—what is your view as a reader—should *polysaccharides* still be being used as a term or should it now be solely carbohydrate polymers?

In summary, this book is a very useful tool for scientist of both academia and industry interested in the fundamental principles of polysaccharides functions and modifications on one hand, and novel applications on the other. This manual opens an interesting way to challenge and encourage scientists to deal with polysaccharides as fascinating polymers with a bright future.

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Shalaby W. Shalaby and Karen J.L. Burg, editors. Advances in Polymeric Biomaterials Series: Absorbable and Biodegradable Polymers (2004, CRC Press, Florida, USA) (289 pp., \$289, ISBN 0-8493-1484-4)

Egyptians sutured wounds as early as 3500 BC using a variety of natural polymers including treated intestines, which are the early versions of collagen-based surgical gut-sutures. In