

and table of contents, a clear writing style and a multi-disciplinary approach. This makes for an excellent volume which should be of use to polymeric and biopolymeric scientists in a variety of different fields. The biopolymeric aspects of the volume will be great interest to the readership of this journal.

John F. Kennedy  
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**Immunoassay—A Survey of Patents, Patent Applications and Other Literature 1980–1991.** Edited by Judith Sigmond, Bernard Salomons and Marten Terpstra, Elsevier Applied Science, London, 1992. viii + 292 pp. Price US\$220.00. ISBN 1-85166-866-7.

Immunologists employ a number of techniques which are common to other biological sciences. For example, the gene structure of immunologically important molecules has been elucidated by molecular biological techniques, while the methods used to isolate antigens and antibodies are those of biochemistry and protein fractionation. However, immunology has developed a great number of its own techniques, particularly those based on the specificity of the antigen–antibody interaction. These are finding increasing use in many of the biological sciences, e.g. in the quantification of low concentrations of antigenic molecules and in the identification of particular antigens. Currently, investigation of the antigenicity of oligosaccharides is of significant interest, especially in the biochemical and medical fields.

'Immunoassay' provides a literature review (patents, patent applications and other literature, such as journal articles) of the many immunological methods now available. The first of the three main chapters brings together non-antigen specific methods, apparatus and kits for immunoassay. It includes enzymatic, fluorescence, luminescent, optical and colorimetric immunoassay methods, radioimmunoassay, other methods and reagents. The second chapter covers immuno-specific methods, such as immunological tests for tumours, venereal diseases, hepatitis, diabetes, rheuma, allergies, heart diseases, pregnancy, urine, thyroid, interferon, bacteria, fungi and testing cattle. The third chapter focusses on devices, i.e. apparatus, strips, tubes and miscellaneous. This is then followed by a list of patentees.

The information in this book serves as a valuable guide for those active in the field, especially immunologists, chemists, pharmacologists and bioengineers. However, it will probably be accessed by reference and

borrowing rather than personal purchase because of its high price.

Marion Paterson  
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**Industrial Gums—Polysaccharides and Their Derivatives—Third Edition.** Edited by Roy L. Whistler and James N. BeMiller, Academic Press, Inc., San Diego, 1993. xi + 642 pp. Price £105.00. ISBN 0-12-746253-8.

Polysaccharides or gums are found in nearly all plant and animal tissues. In many instances, the exact role in nature of these polysaccharides is not known. However, it appears that several function either as energy resources or as structural components.

The commercial usefulness of most gums is based on their ability to alter the basic properties of water. The major uses of gums are as thickening agents, suspending agents, film-forming agents, water-retaining agents, coagulants, colloids, and lubricants. Gums are used extensively in laundry products, textiles, adhesives, paper, paint, and foods. Nearly all gums have a combination of food and industrial application.

The third edition of 'Industrial Gums' provides an up-to-date coverage of gums and their uses. It also includes the recent progress in the understanding of the physical and biochemical behaviour of polysaccharides, and the molecular basis for their various properties.

The opening chapter, by R.L. Whistler, outlines briefly the factors which affect raw gum costs; the industrially valuable properties of gums; chemical modifications of gums, as well as the sensory perception and nutritional characteristics of gums.

The first ten chapters bring together detailed information on conformational origins of polysaccharide solution and gel properties; chemical modification of gums; biosynthesis of extracellular polysaccharides; agar; algin; carrageenan; guar, locust bean, tara and fenugreek gums; aloe, chia, flaxseed, okra, psyllium seed, quince seed and tamarind gums; and pectin. The other chapters discuss hemicelluloses; exudate gums; xanthan, gellan, welan and rhamnan; dextran; curdlan; pullulan; scleroglucan; cellulose derivatives; starch-based gums; chitin; and analysis of gums in foods.

Each chapter provides an interesting reference work of direct relevance to those involved in the research, development and teaching of the subject.

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