

Molecular Modeling Techniques in Material Sciences would be very useful to scientists researching or working on molecular modeling applications in industry.

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K. F. Gotlieb, A. Capelle (Eds.), Starch derivatization; Fascinating and unique industrial opportunities, Wageningen Academic Publishers, The Netherlands, 2005 (158pp., €45, ISBN 9076998604)

Starch has many uses in food and other industries such as paper and textile industry. It renewable and cheap. starch can be produced from plants like corn, tapioca and potato. *Starch derivatisation; Fascinating and unique industrial opportunities* discusses the derivatisation and application of polysaccharides and natural polymers.

Starch derivatization; Fascinating and unique industrial opportunities begins with focusing on the starch granule, where structural elements, surface layers, channels, pores and voids, surface substitution, hydrolysis, dried and never dried starch have all been discussed. Derivatisation in aqueous alcohols is discussed, the first part talks about native starch explaining carboxymethylation, cationisation, hydroxyethylation, esterification, cross-linking, hydrophobic starch, hydrolysis, oxidation, physical modification and enzymatic conversion. the second part is concerned with pre-cooked starches discussing chemical derivatisation, physical modification and reactions at low temperatures. Then granule swelling inhibitors in derivatisation and their side effects are explained. This is followed by information on amylose inclusion complexes, synergistic effects, carbohydrate oxidation with oxygen varieties on the Spengler and Pfannstiel reactions, spacers and the phosphate group in sugar and starch phosphates as nucleophiles Starch and cellulose acetoacetylation is described. Derivatisation with mixed anhydride and with alkyl sulfates is discussed. The reagent cyanamide which can be prepared by heating calcium carbide in nitrogen to temperatures over 1000 °C and can be extracted from calcium cyanamide with water is also discussed. Urea is used as a fertilizer, feed additive and in urea formaldehyde resins and is produced by heating liquid ammonia and carbon dioxide under pressure. Urea and starch derivatisation is explained. Starch and sugar derivatives with amidoxime and hydroxamic acids are detailed and ester

migration in carbohydrates. Then the book details about ferulic acid esters, which are found in pectin, gallic acid esters, which are present in tannins and lactic acid esters. Super absorbents can be used in hygienic pads, moisturising soil, coating of seeds and in medical applications are also discussed in this book. Enzymes are used in starch derivatisation and the applications of hydrolases, transferases, lyases, oxidoreductases, isomerases and peroxidases are explained. Oligosaccharides, raffinose, lactosucrose and oligosaccharide phosphates are also discussed in this book.

Overall equations, diagrammatic explanations and graphs have been used supporting the text. This book would be useful to any persons studying starch derivatisation and persons working in industry researching in this field.

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Luc A. Cynober (Ed.), Metabolic and Therapeutic Aspects of Amino Acids in Clinical Nutrition, CRC Press LLC, Florida, USA, 2004 (755 pp., £, ISBN 0-8493-1382-1)

For a healthy human diet amino acids are essential, especially leucine, lysine and threonine. Amino Acids play major roles in protein synthesis, gluconeogenesis, ureagenesis and cell metabolism in which amino acids act as regulators. *Metabolic and Therapeutic Aspects of Amino Acids in Clinical Nutrition* is split into five parts and then further split into chapters and areas covered in the book include physiology and physiopathology (amino acid metabolism), amino acid metabolism in disease, requirements and supply of amino acids and supply of amino acids in diseases.

Metabolic and Therapeutic Aspects of Amino Acids in Clinical Nutrition begins with an introduction providing general information about research carried out on amino acids and gives an overview of some of the information found in the rest of the book.

Part one gives an introduction to metabolism of amino acids, and explains how the concentration of amino acids can be measured in biological fluids and tissues, such as the blood and urine, using ion exchange chromatography and reversed-phase HPLC methods. Details are given about the different approaches to studying amino acid metabolism. In which plasma amino acid concentrations and the significance of their variations, measurement of arteriovenous differences, use of