

Book Reviews

***Paper and Composites from Agro-based Resources*; R.M. Rowell, R.A. Young, J.K. Rowell (Eds.); CRC Press, Boca Raton, 1997, ix + 446 pages, ISBN 1-56670-235-6, £87.50**

Agro-based fibres have been utilised in a wide range of applications for many years. However, the diversity of such applications has increased dramatically over the last decade as many countries are facing increasing pressure to develop alternative sources of fibres for the production of renewable products. Research is therefore focusing upon the utilisation and assessment of fibres from a broad range of sustainable crops, some of which are waste products from other applications.

The first section of this book is devoted to the growth and inventory of agro-based fibres. The current and future availability of agro-based plants is discussed in the first chapter and demonstrates the tremendous volume of fibres available for use in bio-based products. Changes in fibre properties during growth and potential improvement of fibre crops via genetic engineering are also treated in this section. A good understanding of the properties of fibres is required, in order to properly utilise them in bio-based products. Thus, the second section of this book details the physical, mechanical and chemical properties of fibres and also includes standard procedures for chemical analyses and an extensive compilation of fibre properties. One of the major uses of agro-based plants is in the production of pulp and paper. Therefore, a section in this book provides an extensive discussion of the various methods utilised for pulp and paper production and details specific pulping and properties of paper from a wide variety of agro-based plants.

The use of bio-based composites has rapidly expanded in recent years and there is tremendous potential for future growth in this area. A broad range of agro-based fibres is utilised as the main structural components or as fillers/reinforcing agents in such composite materials. The methods and approaches utilised for production of the many different types of composites based on agro-fibres is thoroughly described in the final and largest section of this book. The properties of both low and high fibre content thermoplastic and thermosetting-based composites are described and methods for the chemical modification of fibres for property enhancement are also discussed. Other topics covered include packaging and lightweight structural composites, filters, sorbents and geotextiles.

This book aims to provide in one volume a unique compilation of comprehensive information on the current and

future applications of agro-based fibres for paper and composites. It is an extremely informative volume that is an invaluable source of information for all researchers interested in agro-based fibres.

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***Spectral Methods in Food Analysis*; M.M. Mossoba (Ed.); Marcel Dekker, New York, 1999, 468 pages, ISBN 0-8247-0223-9, US\$165.00**

Vast developments in the field of spectroscopic research are currently undergoing major technological advancement and the use of spectroscopy in novel applications is growing rapidly. Spectral techniques have found many practical applications in food science. They have been applied to the analysis of intact foods as well as the identification and quantitation of many types of individual compounds of interest, namely, food constituents, additives, and contaminants.

Spectral Methods in Food Analysis gives a comprehensive, up-to-date and authoritative understanding of the field of spectroscopic research of foods. It covers introductory topics, outlining basic principles and is an advanced reference source drawing together many specialised spectral techniques, their instrumentation and applications. The literature describes the elucidation of molecular structure for pure isolated compounds and components of complex mixtures, as well as established and new techniques such as MRI. It categorises spectroscopic issues created by food complexity, and reviews the applications of EPR, including post-irradiation dosimetry. Also included in the literature are details of non-invasive and non-destructive measurement techniques, as well as the utility of vibrational spectroscopy.

Aiding the literature are useful references (over 850), as well as tables, equations, drawings and photographs. Each of these illustrations is well presented, relevant as well as scientifically accurate.