

PRESS RELEASE

A MILESTONE PUBLICATION DEALING WITH PLANT FIBRES, NEW COMPOSITES
AND THEIR ENGINEERING APPLICATIONS

PLANT FIBRE

Chemistry, Processing and Advanced Engineering Products



Edited by

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- ➔ a systematic examination of the structure, chemistry and behaviour of plant fibres
- ➔ an overview of the conversion of plant fibres into a variety of functional materials such as nanocellulose, textiles and films
- ➔ information about the advances in novel plant fibre composites and their engineering applications

This book provides an invaluable update on the science and technology of plant fibre and its growing importance as a source material. The book presents a basic and clear understanding of the most advanced developments of a wide range of functional plant fibre materials.

The development and utilisation of plant fibre resources are considered to be one of the strategies with most potential for reducing consumption of petrochemicals, whether for direct use to produce energy in place of oil, coal and gas, and chemicals or to develop new materials. The ready supply and low cost of these 'green' products and processes provide endless opportunities.

The book considers structure, processing, properties, and applications with a comprehensive examination and discussion of the structure, chemistry and behaviour of plant fibre. This is followed by basic information and a thorough understanding of functional materials directly derived from plant fibres, mainly including nanocellulose, physically and chemically treated plant fibre, cellulose film, cellulose textile, cellulose detection materials, and nanocellulose aerogel. The processing, property and application of functional plant fibre composites is then considered, including nanocellulose composite, plant fibre/natural resin composite, wood plastic composites and long fibre composites.

Contents: Introduction: a perspective of plant fibre and its advanced products; Structure of plant fibres; Chemistry of plant fibres; Plant fibre: its behaviour; Nanocellulose: the next world-changing super material; Interface and bonding mechanisms of plant fibre composites; Functional (nano)cellulose film; Cellulose-based textile materials; Cellulose-based functional detection materials; Nanocellulose-based aerogels; Nanocellulose-based composites; Bioresin-natural fibre composites; Wood plastic composites; Long fibre strong composites; Index

Readership: Plant Fibre serves as a technical guide and reference for researchers, engineers, manufacturers, graduates and end users in materials science and technology, design and civil engineering, and other engineering disciplines.

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