1. Record Nr. UNINA9910298276903321

Titolo	Agricultural Biomass Based Potential Materials / / edited by Khalid Rehman Hakeem, Mohammad Jawaid, Othman Y. Alothman
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-13847-2
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (508 p.)
Disciplina	338.1 338.927 541.2254 570 620.11 620.12 630
Soggetti	Forest products Polymers Agriculture Agricultural economics Biomaterials Sustainable development Wood Science & Technology Polymer Sciences Agricultural Economics Sustainable Development
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Potential utilization of kenaf biomass in different applications -- Natural fiber reinforced polymer for structural application -- Natural fiber reinforced composites: Potential, applications and properties -- Effects of nanotechnology on fluid flow in agricultural and wood-based composites materials -- Composites from Bagasse fibres: Its characterization and applications -- Life cycle assessment of natural

fiber polymer composites -- Tensile, oxygen barrier and biodegradation properties of rice husk reinforced polyethylene blown films -- Extraction of lignin from biomass for biodiesel production -- Potential agro-wastes for biofuels -- Utilization of oilseed cakes for human nutrition and health benefits -- Bamboo biomass: Various studies and potential applications for value added products -- Mesoporous silica powder for dental restoration composites from rice husk: A green sol-gel synthesis -- Rheological properties and processing of polymer blends with micro- and nanofibrillated cellulose -- Optimization of admixture and three-layer particleboard made from oil palm empty fruit bumch and rubberwood clones -- Characterization and use of coir, almond, apricot, argan, shells and wood as reinforcement in the polymeric matrix in order to valorize these productions -- Algae derived biomass for sustainable and renewable biofuel production -- Empty fruit bunches in the race for energy, biochemical and material industry -- Extraction of lignin from biomass for biofuel production -- Biomass pellet technology: A green approach for sustainable development -- Biomass an ageless raw material for biofuels -- Power reservoirs of jumble based biomass in Asia -- Chemical processes and reaction by-productions involved in the biorefinery concept of biofuel production -- Chemical modifications and properties of coir fibers biocomposites.

Sommario/riassunto

Agricultural biomass is abundant worldwide and it can be considered as alternative source of renewable and sustainable materials which can be used as potential materials for different applications. Despite this enormous production of agricultural biomass, only a small fraction of the total biomass is utilized for different applications. Industry must be prepared to take advantage of the situation and utilize the available biomass in the best possible manner. Agricultural biomass such as natural fibres has been successfully investigated as a great potential to be used as a renewable and sustainable materials for the production of composite materials. Natural fibres offer excellent specific properties and have potential as outstanding reinforcing fillers in the matrix and can be used as an alternative material for biocomposites, hybrid composites, pulp, and paper industries. Natural fibre based polymer composites made of jute, oil palm, flex, hemp, kenaf have a low market cost, attractive with respect to global sustainability and find increasing commercial use in different applications. Agricultural biomass based composites find applications in a number of fields viz., automotive industry and construction industry. Future research on agricultural biomass-natural fibre based composites should not only be limited to its automotive applications but can be explored for its application in aircraft components, construction industry, rural housing and biomedical applications. In this book we will cover the chemical, physical, thermal, electrical, and biodegradability properties of agricultural biomass based composite materials and its different potential applications. The main goal of this volume is to familiarize researchers, scientists and engineers with the unique research opportunities and potentials of agricultural biomass based materials.