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Descrizione fisica	1 online resource (XII, 370 p. 90 illus., 25 illus. in color.)
Collana	Green Chemistry and Sustainable Technology, , 2196-6982
Disciplina	620.5
Soggetti	Renewable energy resources Biochemical engineering Energy systems Microbiology Nanotechnology Chemical engineering Renewable and Green Energy Biochemical Engineering Energy Systems Industrial Chemistry/Chemical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Nanotechnology for Green Bioenergy -- Exploring the role of nanobiotechnology in biofuel production -- Application of nanotechnology in biomass pretreatment -- Applications of carbon-based nanomaterials in biofuel cell -- Nanoparticle engineering for microalgal biodiesel production -- Potential on application of nanotechnology for thermochemical conversion of microalgal biomass -- Hierarchy nanostructure of lignocellulose and its impact on the conversion of cellulose to biofuels -- Role of nanoparticles in enzymatic hydrolysis of lignocellulose in ethanol -- Need for physico-chemical characterization of nanoparticles used in bioenergy and biofuel production -- From biomass to fuels: nano-catalytic processes -- Heterogeneous catalyst for biomass to biofuels conversion --

Nanocatalysts for advanced biofuel production -- An overview of recent advances in the application of metal-oxide nanocatalysts for biofuel production” -- Nanocatalysis for conversion of non-edible oil to biogasoline via deoxygenation reaction -- Impact of Nano-additives blended biodiesel fuels in diesel engines -- Nanotechnologies and the management of risk generated during bioenergy / biofuel production.

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Sommario/riassunto

A unique feature of this book is its focus on nanotechnological solutions for the production of bioenergy and biofuels. Coverage includes topics such as nanobiotechnology, microalgae, biofuel cells, biomass pretreatment, and biomass conversion. An international team of experts also addresses the need to precisely characterize nanoparticles and the role of catalysts. The range of topics addressed, together with a chapter on risk management, make this book a highly useful resource for a broad readership including physicists, chemists, microbiologists, biotechnologists, food technologists, agricultural engineers, and nanotechnologists.

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