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Nota di contenuto	Chapter-1: Algal Biomass: Potential renewable feedstock for biofuels production -- Chapter-2: Algal Butanol Production -- Chapter-3: Suitability of the lantana weed as a substrate for biogas production -- Chapter-4: Recent progress in emerging microalgae technology for biofuel production -- Chapter-5: Recent update on biodiesel production using various substrates and practical execution -- Chapter-6: Cellulose Nanofibers from Agro-wastes of North East India for Nanocomposite and Bioenergy Applications -- Chapter-7: Impact of pretreatment technologies for biomass to biofuels production -- Chapter-8: Impact of pretreatment technology on cellulosic availability for fuel production -- Chapter-9: Application of metabolic engineering for biofuel production in microorganisms -- Chapter-10: Nanomaterials and its application to improve biomass to bio-fuels

production.

Sommario/riassunto

As a substrate, cellulose plays a crucial role in the biomass-based biofuel production process, and is essential to enzyme and sugar production. Accordingly, ensuring maximum availability of cellulose for enzyme production and bioconversion for sugar generation is one of the major challenges for sustainable biofuels production. To date there has been extensive research on biofuel production using lignocellulosic biomass, but there is a huge gap when it comes to the critical analysis of cellulose content, structural feasibility, availability, and economic processing, so that it can be converted for enzyme and fuel production at low cost. Consequently, this book discusses the availability of lignocellulosic substrate for biofuel production in light of the challenges that the biofuels industry is currently facing. After identifying the major substrate selection challenges for the practical biofuel production process, the book addresses said challenges by focusing on various issues such as: potential substrates that have high cellulosic content, structural feasibility, and low-cost & effective processing to remedy the structural complexity of biomass structure and create added value. In addition, it covers recent advancements in cellulase production and outlines future prospects. Given its scope, it offers a valuable guide for research students and industry practitioners alike.
