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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction: an overview of advanced biofuels and bioproducts -- Sugarcane ethanol: strategies to a successful program in Brazil -- Smokeless biomass pyrolysis for producing biofuels and biochar as a possible arsenal to control climate -- Oxygenation of biochar for enhanced cation exchange capacity -- Characterization of biochars using advanced solid-state ¹³ C nuclear magnetic resonance spectroscopy -- Biochar fertilizers as soil amendment and carbon sequestration agent -- Selection and use of designer biochars to improve characteristics of Southeastern USA Coastal Plain degraded soils -- Biochar: A co-product to bioenergy from slow-pyrolysis technology -- Catalytic pyrolysis of biomass -- Selective fast pyrolysis of biomass to produce fuels and chemicals -- Sub- and supercritical water technology for biofuels -- Biomass to liquid fuel via Fischer-Tropsch and related syntheses -- Fischer-Tropsch hydrocarbons

synthesis from a simulated biosyngas -- To synthesize liquid fuels on precipitated Fe catalyst with CO₂-containing syngas gasified from biomass -- Cellulosic butanol production from agricultural biomass and residues: Recent advances in technology -- Consolidated bioprocessing -- The synthesis, regulation and modification of lignocellulosic biomass as a resource for biofuels and bioproducts -- Genetic modifications of plant cell walls to increase biomass and bioethanol production -- Designer enzymes/cellulosomes -- Designer algae for photobiological production of hydrogen from water -- Designer photosynthetic organisms for photobiological production of ethanol from carbon dioxide and water -- Synthetic biology for photobiological production of butanol and/or related higher alcohols from carbon dioxide and water -- Production of biodiesel and nontoxic jatropha seedcake from *Jatropha curcas* -- Biofuels from microalgae towards meeting advanced fuel standards -- Bioprocess engineering aspects of biodiesel and bioethanol production from microalgae -- Closed photo-bioreactors as tools for biofuel production -- Alternative methods for the extraction of hydrocarbons from *Botryococcus braunii* -- Valorisation of waste frying oils and animal fats for biodiesel production -- One-step conversion of algal biomass to biodiesel with formation of an algal char as potential fertilizer -- Process economics and greenhouse gas audit for microalgal biodiesel production -- Sustainability considerations about microalgae for biodiesel production -- Life cycle assessment of algae-to-energy systems -- Cultivation of *Arthrospira (Spirulina) platensis* by fed-batch process -- Bioprocess development for chlorophyll extraction from microalgae -- Screening for bioactive compounds from algae -- Biogas production from algae and cyanobacteria through anaerobic digestion: a review, analysis and research needs -- Gas hydrates as a potential energy source: state of knowledge and challenges -- Electrofuels: A new paradigm for renewable fuels -- Engineering *Ralstonia eutropha* for production of isobutanol from CO₂, H₂, and O₂ -- Microbial ElectroCatalytic (MEC) biofuel production.

Sommario/riassunto

Designed as a text not only for students and researchers, but anyone interested in green technology, *Advanced Biofuels and Bioproducts* offers the reader a vast overview of the state-of-the-art in renewable energies. The typical chapter sets out to explain the fundamentals of a new technology as well as providing its context in the greater field. With contributions from nearly 100 leading researchers across the globe, the text serves as an important and timely look into this rapidly expanding field. The 40 chapters that comprise *Advanced Biofuels and Bioproducts* are handily organized into the following 8 sections:

· Introduction and Brazil's biofuel success ·	Smokeless
biomass pyrolysis for advanced biofuels production and global biochar	
carbon sequestration ·	Cellulosic Biofuels ·
Photobiological	
production of advanced biofuels with synthetic biology ·	Lipids-
based biodiesels ·	Life-cycle energy and economics analysis ·
High-	
value algal products and biomethane ·	Electrofuels.