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Nota di contenuto	Recent Advances and Future Prospects of Microalgal Lipid Biotechnology -- Comprehensive Screening of Micro and Macro-Algal Species for Bioenergy -- Microalgae for Biofuels: Applications, Process Constraints and Future Needs -- Algal Biofilm Systems – An Answer to Algal Biofuel Dilemma -- Algal Technologies for Wastewater Treatment and Biofuels Production: An Integrated Approach for Environmental Management -- Exploring Microalgae Consortia for Biomass Production: A Synthetic Ecological Engineering Approach Towards

Sustainable Production of Biofuel Feedstock -- Modeling The Effects of Operational Parameters on Algae Growth -- Recent Advances in Improving Ecophysiology of Microalgae for Biofuels -- Phycoremediation of Heavy Metals Coupled with Generation of Bio-Energy -- Critical Evaluation of Algal Biofuel Production Processes Using Wastewater -- Advancements in Algal Harvesting Techniques for Biofuel Production -- Key Issues in Pilot Scale Production, Harvesting, and Processing of Algal Biomass for Bio-Fuels -- Algal Biomass Pretreatment for Improved Biofuel Production -- Environmental and Economic Sustainability of Algal Lipid Extractions: Inessential Approach for the Commercialization of Algal Biofuels -- Catalytic Conversion of Microalgal Lipids to Biodiesel: Overview and Recent Advances -- Biomethanation Potential of Algal Biomass -- Technological Advances in Biohydrogen Production from Microalgae -- Hydrothermal Liquefaction: A Promising Pathway for Biorefinery of Algae -- Recent Advances in Production of Biofuel and Commodity Chemicals from Algal Biomass -- Challenges and Opportunities in Commercialisation of Algal Biofuels -- Ecological, Economical and Life Cycle Assessment of Algae and its Biofuel.

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### Sommario/riassunto

This edited volume focuses on comprehensive state-of-the-art information about the practical aspects of cultivation, harvesting, biomass processing and biofuel production from algae. Chapters cover topics such as synthetic ecological engineering approaches towards sustainable production of biofuel feedstock, and algal biofuel production processes using wastewater. Readers will also discover more about the role of biotechnological engineering in improving ecophysiology, biomass and lipid yields. Particular attention is given to opportunities of commercialization of algal biofuels that provides a realistic assessment of various techno-economical aspects of pilot scale algal biofuel production. The authors also explore the pre-treatment of biomass, catalytic conversion of algal lipids and hydrothermal liquefaction with the biorefinery approach in detail. In a nut shell, this volume will provide a wealth of information based on a realistic evaluation of contemporary developments in algal biofuel research with an emphasis on pilot scale studies. Researchers studying and working in the areas of environmental science, biotechnology, genetic engineering and biochemistry will find this work instructive and informative. .

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