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Nota di contenuto	Introduction to Environment-Friendly Bioprocesses by Microalgae and Cyanobacteria -- CO2 Bio-capture by Microalgae and Cyanobacteria Cultures -- Removal of Nitrogen and Phosphorus from Domestic Wastewater by Microalgal -- Wastewater Treatment by Microalgae and Cyanobacteria. The Reduction of the Contaminant Potential of Real Domestic Wastewater: A Case Study -- Phycoremediation of Industrial Wastewater -- Treatment of Industrial Wastewater with Microalgae -- Bio-fertilization by Nitrogen-Fixing Cyanobacteria, Nutrient Supplementation, and Growth Promotion -- Biodiesel Production by Microalgal Biomass and Strategies to Improve Its Quality -- Dark Fermentation of Microalgae and Cyanobacteria for Hydrogen Production -- Induction of Carotenoid Synthesis in Microalgae with Reference to Their Production Outdoors -- Effect of Dietary Supplementation with Microalgae Biomass on Gastrointestinal Tract Health -- Sustainable

Production of Diatom-Based Omega-3 Fatty Acids -- Metabolites from Microalgae Cultures as Potential Sources for Pharmaceutical Industrial -- Microalgae and Cyanobacteria Antioxidant Capacity under Stress Conditions -- Biogas Obtained from the Anaerobic Digestion of Microalgal Biomass -- Microalgal Biomass-Derived Biochars -- Process Integration via a Sustainable Biorefinery Approach Using Agro-Industrial Residues and Photosynthetic Consortia -- Attached Biofilm Cultivation (ABC) of Mixotrophic Microalgae for the Sustainable Supply of Innovative New Bioproducts -- Interactions Between Academia and Governmental Organizations Regarding to Management of River Water Basins at a Socially Vulnerable Context.

Sommario/riassunto

Microalgae and cyanobacteria are a very diverse group of photosynthetic microorganisms with many applications. Some of them are related to the accumulation of molecules involved in specific metabolic pathways such as pigments, fatty acids, polyunsaturated fatty acids, carbohydrates, amino acids, etc. Also, there are uses of the biomass related to the exploitation of physiological necessities such as the absorption of essential nutrients (the removal of nitrogen and phosphorus from wastewater, the capture of CO₂ from the fixation of nitrogen, etc.). Nevertheless, the evaluation in financial and life-cycle aspects is necessary to ensure the industrial application of the processes. The objective of the book is to analyze innovative applications of microalgae and cyanobacteria to develop environmental-friendly processes for removal of pollutants, wastewater treatment, production of high-value products or bioenergy, and finally evaluate the feasibility of the processes both in economic and sustainability aspects. .
