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Sommario/riassunto	Microalgae have been intensively studied for CO2 capture, nutrient removal from wastewater, and biofuels production. These photosynthetic microorganisms use solar energy with efficiency ten times greater than terrestrial plants and are responsible for about 50% of the world's oxygen production. Therefore, microalgae have been considered a sustainable solution for CO2 capture. Besides carbon, their growth also requires other macronutrients: nitrogen and phosphorus. To avoid the addition of fertilizers (increasing the production costs), these nutrients can be supplied if wastewater is used as the culture medium. The integration of biomass production with wastewater treatment enables a reduction in operational costs and the environmental impact. Microalgae are also known for their high lipid contents and high growth rates and are a promising oil source for biodiesel production. This Special Issue Book presents the recent research activities concerning the environmental applications of microalgae and their potential for biofuels production, focusing on the main challenges for their large-scale application. Since microalgal culturing can address different environmental and non-environmental issues, the achievements from the integration of multiple microalgal applications are also considered in this Special Issue Book.