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Nota di contenuto	Chapter 1 Photosynthetic microbes – Evolution, Classification and Physiology -- Chapter 2 Structural and functional dynamics of microbial photosystem complexes -- Chapter 3 Photosynthetic CO2 fixation in unicellular microbes -- Chapter 4 Techniques in photosynthetic physiology and cultivation of photosynthetic microbes -- Chapter 5 Approaches in wastewater utilization using photosynthetic microbes -- Chapter 6 Microalgae photosynthesis for nutrient recovery and value addition -- Chapter 7 Bacterial Photosynthesis for nutrient recovery and value Addition -- Chapter 8 Advent of genetic and metabolic engineering in improving microbial photosynthesis -- Chapter 9 Industrial symbiosis of photosynthetic microbial biorefineries for circular economy -- Chapter 10 Artificial photosynthesis – nexus of

photon energy and bioreactors.

Sommario/riassunto

This book uncovers the basic principles of microbial photosynthesis and the latest technological interventions of this crucial phenomenon. In the recent past, the basic principles of microbial photosynthesis were technologically articulated to engineer several cell factories that can utilize waste resources and generate different groups of industrially valuable products. Also, the list of model organisms for specific usage have been increasing enormously. This volume covers the material in four sections; each of the part dealing with the basic principles of microbial photosynthesis in an applied orientation focusing on waste valorization and circular bioeconomy. Furthermore, the following chapters deal with the very recent advancements in metabolic engineering and artificial photosynthesis with respect to value addition. Not only will this book be available for graduate and postgraduate students in microbiology, biotechnology, plant sciences, environmental sciences, energy engineering, and renewable energy, it is also an excellent material for researchers needing a multidisciplinary approach.