

1. Record Nr.	UNINA9910409694003321
Titolo	Microbial Photosynthesis // edited by Qiang Wang
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-3110-2
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (VIII, 343 p. 83 illus., 70 illus. in color.)
Disciplina	581.13342
Soggetti	Plant physiology Marine sciences Freshwater Microbial ecology Microbiology Plant biochemistry Fotosíntesi Fitoquímica Plant Physiology Marine & Freshwater Sciences Microbial Ecology Eukaryotic Microbiology Plant Biochemistry Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part 1. Photosynthesis and Energy Transfer -- Chapter 1. Molecular mechanism of photosynthesis driven by red-shifted chlorophylls -- Chapter 2. Cyanobacterial NDH-1-photosystem I supercomplex -- Chapter 3. Recent progress on the LH1-RC complexes of purple photosynthetic bacteria -- Chapter 4. Composition, organisation, and function of purple photosynthetic machinery -- Chapter 5. Redox potentials of quinones in aqueous solution: Relevance to redox potentials in protein environments -- Chapter 6. Photosynthesis in Chlamydomonas reinhardtii: what we have learned so far? -- Part 2. Photosynthesis and the Environment -- Chapter 7. Photosynthetic

performances of marine microalgae under influences of rising CO₂ and solar UV radiation -- Chapter 8. Acquisition of Inorganic Carbon by Microalgae and Cyanobacteria -- Chapter 9. Circadian Clocks in Cyanobacteria -- Chapter 10. Iron Deficiency in Cyanobacteria -- Chapter 11. Adaptive Mechanisms of the Model Photosynthetic Organisms, Cyanobacteria, to Iron Deficiency -- Chapter 12. The roles of sRNAs in regulating stress responses in cyanobacteria -- Part 3. Artificial Photosynthesis and Light-driven Biofactory -- Chapter 13. Mimicking the Mn₄CaO₅-cluster in Photosystem II -- Chapter 14. Photosynthetic improvement of industrial microalgae for biomass and biofuel production -- Chapter 15. Self-assembly, organisation, regulation, and engineering of carboxysomes: CO₂-fixing prokaryotic organelles. .

Sommario/riassunto

As the largest scale chemical reaction, photosynthesis supplies all of the organic carbon and oxygen for life on Earth. It is estimated that the photosynthetic activity of microorganisms is responsible for more than 50% of the primary production of molecular oxygen on Earth. This book highlights recent breakthroughs in the multidisciplinary areas of microbial photosynthesis, presenting the latest developments in various areas of microbial photosynthesis research, from bacteria to eukaryotic algae, and from theoretical biology to structural biology and biophysics. Furthermore, the book discusses advances in photosynthetic chassis, such as in the context of metabolic engineering and green chemical production. Featuring contributions by leading authorities in photosynthesis research, the book is a valuable resource for graduate students and researchers in the field, especially those studying biological evolution and the origin of life. .
