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Collana	Advances in photosynthesis and respiration ; ; v. 28
Altri autori (Persone)	HunterC. Neil <1954->
Disciplina	579.38
Soggetti	Photosynthetic bacteria Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Physiology, Ecology and Evolution -- An Overview of Purple Bacteria: Systematics, Physiology, and Habitats -- Evolutionary Relationships Among Purple Photosynthetic Bacteria and the Origin of Proteobacterial Photosynthetic Systems -- New Light on Aerobic Anoxygenic Phototrophs -- Molecular Structure and Biosynthesis of Pigments and Cofactors -- Biosynthesis of Bacteriochlorophylls in Purple Bacteria -- Vitamin B12 (Cobalamin) Biosynthesis in the Purple Bacteria -- Distribution and Biosynthesis of Carotenoids -- Membrane Lipid Biosynthesis in Purple Bacteria -- Antenna Complexes: Structure, Function and Organization -- Peripheral Complexes of Purple Bacteria -- Reaction Center-Light-Harvesting Core Complexes of Purple Bacteria -- Structure-Function Relationships in Bacterial Light-Harvesting Complexes Investigated by Reconstitution Techniques -- Spectroscopic Properties of Antenna Complexes from Purple Bacteria -- Energy Transfer from Carotenoids to Bacteriochlorophylls -- Spectroscopy and Dynamics of Excitation Transfer and Trapping in Purple Bacteria -- Organization and Assembly of Light-Harvesting Complexes in the Purple Bacterial Membrane -- From Atomic-Level Structure to Supramolecular Organization in the Photosynthetic Unit of Purple Bacteria -- Reaction Center Structure and Function -- Structural Plasticity of Reaction Centers from Purple Bacteria -- Structure and Function of the Cytochrome c 2:Reaction Center Complex from Rhodobacter sphaeroides -- Directed Modification of Reaction Centers

from Purple Bacteria -- Mechanism of Charge Separation in Purple Bacterial Reaction Centers -- The Acceptor Quinones of Purple Photosynthetic Bacteria — Structure and Spectroscopy -- Cyclic Electron Transfer Components and Energy Coupling Reactions -- Biogenesis of c-type Cytochromes and Cytochrome Complexes -- Structural and Mutational Studies of the Cytochrome bc 1 Complex -- The Cytochrome bc 1 and Related bc Complexes: The Rieske/Cytochrome b Complex as the Functional Core of a Central Electron/Proton Transfer Complex -- Proton Translocation and ATP Synthesis by the FoF1-ATPase of Purple Bacteria -- Proton-Translocating Transhydrogenase in Photosynthetic Bacteria -- Functional Coupling Between Reaction Centers and Cytochrome bc 1 Complexes -- Metabolic Processes -- Respiration and Respiratory Complexes -- Carbon Dioxide Metabolism and its Regulation in Nonsulfur Purple Photosynthetic Bacteria -- Degradation of Aromatic Compounds by Purple Nonsulfur Bacteria -- Metabolism of Inorganic Sulfur Compounds in Purple Bacteria -- Dissimilatory and Assimilatory Nitrate Reduction in the Purple Photosynthetic Bacteria -- Swimming and Behavior in Purple Non-Sulfur Bacteria -- Metals and Metalloids in Photosynthetic Bacteria: Interactions, Resistance and Putative Homeostasis Revealed by Genome Analysis -- Genomics, Regulation and Signaling -- Purple Bacterial Genomics -- Regulation of Gene Expression in Response to Oxygen Tension -- Regulation of Genes by Light -- Regulation of Hydrogenase Gene Expression -- Regulation of Nitrogen Fixation -- Regulation of the Tetrapyrrole Biosynthetic Pathway -- Bacteriophytochromes Control Photosynthesis in *Rhodospseudomonas palustris* -- Photoreceptor Proteins from Purple Bacteria -- New Applications and Techniques -- Foreign Gene Expression in Photosynthetic Bacteria -- Assembly of Bacterial Light-Harvesting Complexes on Solid Substrates -- Optical Spectroscopy of Individual Light-Harvesting Complexes from Purple Bacteria -- De novo Designed Bacteriochlorophyll-Binding Helix-Bundle Proteins -- Design and Assembly of Functional Light-Harvesting Complexes -- The Supramolecular Assembly of the Photosynthetic Apparatus of Purple Bacteria Investigated by High-Resolution Atomic Force Microscopy -- Protein Environments and Electron Transfer Processes Probed with High-Frequency ENDOR.

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## Sommario/riassunto

The Purple Phototrophic Bacteria is a comprehensive survey of all aspects of these fascinating bacteria, the metabolically most versatile organisms on Earth. This volume is organized into the following sections: Physiology, Evolution and Ecology; Biosynthesis of Pigments, Cofactors and Lipids; Antenna Complexes: Structure, Function and Organization; Reaction Center Structure and Function; Cyclic Electron Transfer Components and Energy Coupling Reactions; Metabolic Processes; Genomics, Regulation and Signaling; and New Applications and Techniques. This book is a compilation of 48 authoritative chapters, written by leading experts who highlight the huge progress made in spectroscopic, structural and genetic studies of these bacteria since 1995, when the last book on this topic was published i.e. *Anoxygenic Photosynthetic Bacteria*, Volume 2 in the Series, edited by Robert E. Blankenship, Michael T. Madigan and Carl E. Bauer. This new volume is similarly intended to be the definitive text on these bacteria for many years to come, and it will be a valuable resource for experienced researchers, doctoral & masters students, as well as advanced undergraduates in the fields of ecology, microbiology, biochemistry, biophysics, integrative biology, and molecular & cell biology. Scientists interested in future applications of these bacteria which could harness their potential for nanotechnology, solar energy

research, bioremediation, or as cell factories, will also find this book useful.

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