

Preface

This book introduces the basic physical, chemical, and biological principles underlying the first steps in photosynthesis: light absorption, excitation energy transfer, and charge separation. In Part 1, we introduce pigments and their spectroscopic/redox properties. In Part 2, pigment-proteins as they occur in various natural systems (plants, algae, photosynthetic bacteria) are described, including

the regulation of light harvesting. Part 3 deals with the physics underlying light harvesting: energy transfer and electron transport. Part 4 introduces basic and advanced spectroscopic methods, including data analysis. In Part 5, we discuss artificial and natural photosynthetic systems, how they are assembled, and what the energy transfer properties are.