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Autore	WARDEN, P. Gregory
Titolo	The small finds / P. Gregory Warden . Glass / Andrew Oliver . Faunal and human skeletal remains / Pam J. Crabtree and Janet Monge
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Autore	Balzani Vincenzo <1936->
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Nota di contenuto	Molecular Devices and Machines - A Journey into the Nano World; Preface; Reference; Contents; 1 General Concepts; 1.1 Devices and Machines at the Molecular Level; 1.2 Miniaturization of Devices and Machines; 1.3 Top-down (Large-downward) Approach; 1.4 Bottom-up (Small-upward) Approach; 1.4.1 Bottom-up Atom-by-atom; 1.4.2 Bottom-up Molecule-by-molecule; 1.5 Supramolecular (Multicomponent) Chemistry; 1.5.1 Comparison of Large Molecules with Supramolecular (Multicomponent) Systems; 1.5.2 Self-organization and Covalent Synthetic Design; 1.5.3 Supramolecular Chemistry, Art, and Nanotechnology ReferencesPart I Devices for Processing Electrons and Electronic Energy; 2 Fundamental Principles of Electron and Energy Transfer; 2.1 Introduction; 2.2 Photoinduced Electron- and Energy-transfer Processes; 2.2.1 Electron Transfer; 2.2.1.1 The Electronic Factor; 2.2.1.2 The Nuclear Factor; 2.2.2 Energy Transfer; 2.2.2.1 Coulombic Mechanism; 2.2.2.2 Exchange Mechanism; 2.2.3 Role of the Bridge;

References; 3 Wires and Related Systems; 3.1 Introduction; 3.2 Conductivity Measurements; 3.3 Electron-transfer Processes at Electrodes; 3.4 Photoinduced Electron Transfer
 3.4.1 Covalently Linked Systems Containing Metal Complexes3.4.2 Covalently Linked Systems Based on Organic Compounds; 3.4.3 Covalently Linked Systems Containing Porphyrins; 3.4.4 DNA and Related Systems; 3.5 Heterogeneous Photoinduced Electron Transfer; 3.6 Energy Transfer; 3.6.1 Covalently Linked Systems Containing Metal Complexes; 3.6.2 Covalently Linked Systems Based on Organic Compounds; 3.6.3 Covalently Linked Systems Containing Porphyrins; 3.6.4 DNA and Related Systems; References; 4 Switching Electron- and Energy-transfer Processes; 4.1 Introduction
 4.2 Switching Electron-transfer Processes4.2.1 Photon Inputs; 4.2.1.1 Long-lived Switching; 4.2.1.2 Fast and Ultrafast Switching; 4.2.2 Redox Inputs; 4.2.3 Acid-Base Inputs; 4.2.4 Other Factors; 4.3 Switching Energy-transfer Processes; 4.3.1 Photon Inputs; 4.3.2 Redox Inputs; 4.3.3 Acid-Base Inputs; 4.3.4 Other Factors; References; 5 Light-harvesting Antennae; 5.1 Introduction; 5.2 Natural Antenna Systems; 5.3 Porphyrin-based Arrays; 5.4 Multichromophoric Cyclodextrins; 5.5 Dendrimers; 5.5.1 Dendrimers Containing Metal Complexes; 5.5.1.1 Metal Complexes as Cores
 5.5.1.2 Metal Complexes in Each Branching Center5.5.2 Dendrimers Based on Organic Chromophores; 5.5.3 Dendrimers Containing Porphyrins; 5.5.4 Host-Guest Systems; 5.5.5 Photoinduced Electron Transfer; 5.6 Other Systems; 5.6.1 Polyelectrolytes; 5.6.2 Polymers; 5.6.3 Rotaxanes; 5.6.4 Zeolites; References; 6 Photoinduced Charge Separation and Solar Energy Conversion; 6.1 Introduction; 6.2 Natural Reaction Centers; 6.2.1 Introduction; 6.2.2 Bacterial Photosynthesis; 6.2.3 Photosystem II; 6.3 Artificial Reaction Centers; 6.3.1 Introduction; 6.3.2 Dyads; 6.3.3 Triads; 6.3.4 Tetrads and Pentads
 6.3.5 Antenna-Reaction Center Systems

Sommario/riassunto

The miniaturization of bulky devices and machines is a process that confronts us on a daily basis. However, nanoscale machines with varied and novel characteristics may also result from the enlargement of extremely small building blocks, namely individual molecules. This bottom-up approach to nanotechnology is already being pursued in information technology, with many other branches about to follow. Written by a team of experienced authors headed by Vincenzo Balzani, one of the pioneers in the development of molecular machinesCovers such diverse aspects as sensors, memory components