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Nota di contenuto	Tomorrow's Chemistry Today: Concepts in Nanoscience, Organic Materials and Environmental Chemistry, Second Edition; Contents; Preface; List of Contributors; Member Societies; Part One: Self- Organization, Nanoscience and Nanotechnology; 1: Subcomponent Self-Assembly as a Route to New Structures and Materials; 1.1 Introduction; 1.2 Aqueous Cu(I); 1.3 Chirality; 1.4 Construction; 1.4.1 Dicopper Helicates; 1.4.2 Tricopper Helicates; 1.4.3 Catenanes and Macrocycles; 1.4.4 [2 x 2] Tetracopper(I) Grid; 1.5 Sorting; 1.5.1 Sorting Ligand Structures with Cu(I); 1.5.2 Simultaneous Syntheses of Helicates 1.5.3 Sorting within a Structure1.5.4 Cooperative Selection by Iron and Copper; 1.6 Substitution/Reconfiguration; 1.6.1 New Cascade Reaction; 1.6.2 Hammett Effects; 1.6.3 Helicate Reconfigurations; 1.6.4 Substitution as a Route to Polymeric Helicates; 1.7 Conclusion and Outlook; 1.8 Acknowledgments; 2: Molecular Metal Oxides and Clusters as Building Blocks for Functional Nanoscale Architectures and Potential

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	Nanosystems; 2.1 Introduction; 2.2 From POM Building Blocks to Nanoscale Superclusters; 2.3 From Building Blocks to Functional POM Clusters 2.3.1 Host-Guest Chemistry of POM-based Superclusters2.3.2 Magnetic and Conducting POMs; 2.3.3 Thermochromic and Thermally Switchable POM Clusters; 2.4 Bringing the Components Together- Towards Prototype Polyoxometalate-based Functional Nanosystems; 2.5 Acknowledgments; 3: Nanostructured Porous Materials: Building Matter from the Bottom Up; 3.1 Introduction; 3.2 Synthesis by Organic Molecule Templates; 3.3 Synthesis by Molecular Self-Assembly: Liquid Crystals and Cooperative Assembly; 3.4 Spatially Constrained Synthesis: Foams, Microemulsions, and Molds; 3.4.1 Microemulsions 3.4.2 Capping Agents3.4.3 Foams; 3.4.4 Molds; 3.5 Multiscale Self- Assembly; 3.6 Biomimetic Synthesis: Toward a Multidisciplinary Approach; 3.7 Acknowledgments; 4: Strategies Toward Hierarchically Structured Optoelectronically Active Polymers; 4.1 Hierarchically Structured Optoelectronic Materials via Self-Assembly; 4.2 Toward Hierarchically Structured Conjugated Polymers via the Foldamer Approach; 4.3 "Self-Assemble, then Polymerize"-A Complementary Approach and Its Requirements; 4.3.1 Topochemical Polymerization Using Self-Assembled Scaffolds 4.3.2 Self-Assembled Scaffolds 4.3.2 Self-Assembly of b-Sheet Forming Oligopeptides and Their Polymer Conjugates4.4 Macromonomer Design and Preparation; 4.5 Hierarchical Self-Organization of Oligopeptide-Polymer Conjugates; 4.7 Conversion to Conjugated Polymers by UV Irradiation; 4.8 Conclusions and Perspectives; 4.9 Acknowledgments; 5: Mimicking Nature: Bio-inspired Models of Copper Proteins; 5.1 Environmental Pollution: How Can "Green" Chemistry Help?; 5.2 Copper in Living Organisms; 5.2.1 Type 1 Active Site; 5.2.2 Type 2 Active Site 5.2.3 Type 3 Active Site
Sommario/riassunto	Providing a glimpse into the future, the young scientists contributing here were considered to be the most important for tomorrow's chemistry and materials science. They present the state of the art in their particular fields of research, with topics ranging from new synthetic pathways and nanotechnology to green chemistry.Of major interest to organic chemists, materials scientists and biochemists.