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Nota di contenuto	Half Title; Title Page; Copyright; Contents; Introduction; Contributors; 1 Gold-Based Catalysts for CO Oxidation, the Water-Gas Shift, and Desulfurization Processes; 1.1 Introduction; 1.2 Bonding Interactions Between Gold and Metal Oxide or Carbide Surfaces; 1.3 Oxidation of Carbon Monoxide on Au-Oxide and Au-Carbide Surfaces; 1.4 Water-Gas Shift Reaction on Au-Oxide Surfaces; 1.5 Decomposition of Sulfur Dioxide on Au-Oxide and Au-Carbide Surfaces; 1.6 Conclusions; Acknowledgments; References; 2 Structural and Electronic Properties of Group 6 Transition Metal Oxide Clusters; 2.1 Introduction 2.2 Accurate Thermochemistry for Transition Metal Oxide Clusters 2.2.1 Heats of Formation; 2.2.2 Metal-Oxygen Bond Energies and Differential Clustering Energies; 2.3 Group 6 Transition Metal Oxides; 2.3.1 (MO) ₃ ; 2.3.2 M ₃ O ₉ ; 2.3.3 Reduced Metal Oxides: M ₃ O ₈ and M ₄ O ₁₀ ; 2.4 Group 6 Transition Metal Hydroxides: Hydrolysis of Metal Oxide Clusters; 2.4.1 Thermodynamic Properties; 2.4.2 H ₂ O Adsorption and Dissociation Energies; 2.4.3 Hydrolysis Potential Energy Surfaces; Conclusions; Acknowledgments; References; 3 Nanoparticle Catalysis for Reforming of Biomass-Derived Fuels; 3.1 Introduction 3.2 Biogas Reforming 3.2.1 Effect of Operating Conditions and Catalyst Components; 3.2.2 Challenges in Biogas Reforming; 3.2.3 Approaches

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5.3 Cyt P450 Biocatalysis on Nanoparticles

Sommario/riassunto

New and Future Developments in Catalysis is a package of seven books that compile the latest ideas concerning alternate and renewable energy sources and the role that catalysis plays in converting new renewable feedstock into biofuels and biochemicals. Both homogeneous and heterogeneous catalysts and catalytic processes will be discussed in a unified and comprehensive approach. There will be extensive cross-referencing within all volumes. The use of catalysts in the nanoscale offers various advantages (increased efficiency and less byproducts), and these are discussed in this volume along
