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References3 Catalytic Reductions; 3.1 Introduction; 3.2 Heterogeneous Reduction Catalysts; 3.2.1 General Properties; 3.2.2 Transfer Hydrogenation Using Heterogeneous Catalysts; 3.2.3 Chiral Heterogeneous Reduction Catalysts; 3.3 Homogeneous Reduction Catalysts; 3.3.1 Wilkinson Catalyst; 3.3.2 Chiral Homogeneous Hydrogenation Catalysts and Reduction of the C= C Double Bond; 3.3.3 Chiral Homogeneous Catalysts and Ketone Hydrogenation; 3.3.4 Imine Hydrogenation; 3.3.5 Transfer Hydrogenation using Homogeneous Catalysts; 3.4 Biocatalytic Reductions; 3.4.1 Introduction
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4.3.1.4 Manganese Catalysts4.3.1.5 Iron Catalysts; 4.3.1.6 Selenium and Organocatalysts; 4.3.1.7 Hydrotalcite and Alumina Systems; 4.3.1.8 Biocatalytic Systems; 4.3.2 Vicinal Dihydroxylation; 4.3.3 Oxidative Cleavage of Olefins; 4.3.4 Oxidative Ketonization; 4.3.5 Allylic Oxidations; 4.4 Alkanes and Alkylaromatics; 4.4.1 Oxidation of Alkanes; 4.4.2 Oxidation of Aromatic Side Chains; 4.4.3 Aromatic Ring Oxidation; 4.5 Oxygen-containing Compounds; 4.5.1 Oxidation of Alcohols; 4.5.1.1 Ruthenium Catalysts; 4.5.1.2 Palladium-catalyzed Oxidations with O(2); 4.5.1.3 Gold Catalysts
4.5.1.4 Copper Catalysts

Sommario/riassunto

This first book to focus on catalytic processes from the viewpoint of green chemistry presents every important aspect:? Numerous catalytic reductions and oxidations methods? Solid-acid and solid-base catalysis? C-C bond formation reactions? Biocatalysis? Asymmetric catalysis? Novel reaction media like e.g. ionic liquids, supercritical CO2? Renewable raw materialsWritten by Roger A. Sheldon -- without doubt one of the leaders in the field with much experience in academia and industry -- and his co-workers, the result is a unified whole, an indispensable s