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Nota di contenuto	Catalysts for Fine Chemical Synthesis; Contents; Series Preface.; Preface to Volume 5; Abbreviations; 1 Industrial Catalysts for Regio- or Stereo-Selective Oxidations and Reductions A Review of Key Technologies and Targets; 1.1 Introduction; 1.2 Reduction of Carbon-Carbon Double Bonds; 1.2.1 Privileged structures: a-amino acids and itaconic acids; 1.2.2 b-Amino acids; 1.2.3 a-Alkyl substituted acids; 1.2.4 a-Alkoxy substituted acids; 1.2.5 Unsaturated nitriles; 1.2.6 Alkenes and allyl alcohols; 1.2.7 a,b-Unsaturated aldehyde reduction.; 1.3 Ketone and Imine Reduction 1.3.1 Catalytic hydrogenation of ketones and imines1.3.2 Asymmetric transfer hydrogenation (ATH) catalysts; 1.3.3 Modified borane reagents; 1.3.4 Biocatalysts (alcohol dehydrogenases and ketoreductases); 1.4 Oxidation; 1.4.1 Sharpless chiral epoxidation of allyl alcohols; 1.4.2 Dioxirane catalyzed epoxidation; 1.4.3 Amines and iminium salts; 1.4.4 Phase transfer catalysts; 1.4.5 The Julia -Colonna method (polyleucine

oxidation); 1.4.6 Organocatalytic alfa-hydroxylation of ketones; 1.4.7 Baeyer-Villiger oxidation.; 1.4.8 Chiral sulfoxides.; References
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Conclusion.References; 2.3 Synthesis and application of heterocyclic phosphine oxazoline (HetPHOX) iridium complexes for the asymmetric hydrogenation of alkenes; 2.3.3 Synthesis of (4S)-[(Z4-1,5-Cyclooctadiene)-{4-tert-butyl-2-(3-diphenylphosphino-thiophene-2-yl)-4,5-dihydrooxazole}iridium(I)]-tetrakis[3,5-bis(trifluoromethyl) phenyl]borate; 2.3.4 Asymmetric hydrogenation of trans-a-Methylstilbene; Conclusion; 2.3.1 Synthesis of (4S)-tert-Butyl-2-(thiophene-2-yl)-4,5-dihydrooxazole; 2.3.2 Synthesis of (4S)-tert-Butyl-2-(3-diphenylphosphinothiophene-2-yl)-4,5-dihydrooxazole; References
2.4 (R)-2,20,6,60-Tetramethoxy-bis[di(3,5-dimethylphenyl)phosphino] -3,30-bipyridine [(R)-Xyl-P-Phos] as a ligand for rhodiumcatalyzed asymmetric hydrogenation of a-dehydroamino acids.

Sommario/riassunto

Volume 5 in the Catalysts for Fine Chemical Synthesis series describes new procedures for the regio- and stereo-controlled transformations of compounds involving oxidation or reduction reactions. It describes a wide range of catalysts, including organometallic systems, biocatalysts and biomimetics. This volume also includes descriptions of a variety of conversions, including: Baeyer-Villiger oxidations; Epoxidation reactions; Hydroxylation reactions; Oxidation of alcohols to aldehydes, ketones and carboxylic acids; Reduction of ketones; and Reduction of alkenes including a, ß-unsaturate