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Nota di contenuto	Cinchona Alkaloids in Synthesis and Catalysis: Ligands, Immobilization and Organocatalysis; Contents; Preface; Biography; List of Contributors; 1 An Overview of Cinchona Alkaloids in Chemistry; 1.1 Brief History; 1.2 Active Sites in Cinchona Alkaloids and Their Derivatives; 1.3 Structural Information on Cinchona Alkaloids; 1.4 How This Book Is Organized; References; Part One: Cinchona Alkaloid Derivatives as Chirality Inducers in Metal-Catalyzed Reactions; 2 Cinchona Alkaloids as Chirality Transmitters in Metal-Catalyzed Asymmetric Reductions; 2.1 Introduction 2.2 Homogeneous Systems for Ketone Reductions 2.3 Heterogeneous Pt and Pd Catalysts Modified with Cinchona Alkaloids; 2.3.1 Background; 2.3.2 Catalysts; 2.3.3 Modifiers and Solvents; 2.3.4 Substrate Scope for

Pt Catalysts; 2.3.4.1 -Keto Acid Derivatives; 2.3.4.2 ,-Diketo Esters; 2.3.4.3 Fluorinated Ketones; 2.3.4.4 -Keto Acetals; 2.3.4.5 -Keto Ethers; 2.3.4.6 Miscellaneous Ketones; 2.3.5 Substrate Scope for Pd Catalysts; 2.4 Industrial Applications; 2.5 Conclusions; References; 3 Cinchona Alkaloids as Chiral Ligands in Asymmetric Oxidations; 3.1 Introduction
3.2 Asymmetric Dihydroxylation of Alkenes
3.2.1 Early Reactions; 3.2.2 Bisalkaloid Ligands; 3.2.3 Mechanism; 3.2.4 Variations; 3.2.5 Substrates and Selectivity; 3.2.5.1 Simple Alkenes; 3.2.5.2 Functionalized Alkenes; 3.2.5.3 Polyenes; 3.2.5.3.1 Nonconjugate Olefins; 3.2.5.3.2 Conjugated Polyenes; 3.2.5.4 Double Asymmetric Induction; 3.2.5.5 Resolutions; 3.2.6 Some Reactions of 1,2-Diols; 3.2.6.1 Cyclic Sulfates and Sulfites; 3.3 Aminohydroxylation; 3.4 Sulfur Oxidations; 3.5 Summary; References
4 Cinchona Alkaloids and their Derivatives as Chirality Inducers in Metal-Promoted Enantioselective Carbon-Carbon and Carbon-Heteroatom Bond Forming Reactions
4.1 Introduction; 4.2 Nucleophilic Addition to Carbonyl or Imine Compounds; 4.2.1 Organozinc Addition; 4.2.1.1 Dialkylzinc Addition to Aldehydes; 4.2.1.2 Dialkylzinc Addition to Imines; 4.2.1.3 Addition of Alkynylzincs to Carbonyls; 4.2.2 Asymmetric Reformatsky Reaction; 4.2.3 Indium-Mediated Addition; 4.2.4 Asymmetric Cyanation; 4.2.4.1 Cyanohydrin Synthesis; 4.2.4.2 Strecker Synthesis
4.2.5 Reactions of Chiral Ammonium Ketene Enolates as Nucleophiles with Different Electrophiles
4.2.5.1 Lewis Acid Assisted Nucleophilic Addition of Ketenes (or Sulfenes) to Aldehydes: -Lactone and -Sultone Synthesis; 4.2.5.2 Lewis Acid Assisted Nucleophilic Addition of Ketenes to Imines: -Lactam Synthesis; 4.2.5.3 Applications of Chiral Ketene Enolates to Formal [4 + 2] type Cyclization; 4.2.6 Aza-Henry Reaction; 4.2.7 Enantioselective Hydrophosphonylation; 4.3 Miscellaneous Reactions; 4.3.1 Claisen Rearrangements; 4.3.2 Pd-Catalyzed Asymmetric Allylic Substitutions
4.3.3 Pauson-Khand Reaction

Sommario/riassunto

This comprehensive review of cinchona-based chirality inducers and their applications covers every topic, including ligands, immobilization and organocatalysis. Each chapter summarizes the scope and limitations of the new methods and technologies, while the final chapter contains carefully selected working procedures of cinchona alkaloid-promoted reactions organized according to reaction type. Invaluable reading for anyone wanting to learn about the current state of this hot topic.

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Autore	Thompson Peter M.
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