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Nota di contenuto	Palladium-Catalyzed Coupling Reactions: Practical Aspects and Future Developments; Contents; Foreword; Preface; List of Contributors; 1 Palladium-Catalyzed Cross-Coupling Reactions - A General Introduction; 1.1 Introduction; 1.1.1 Historical Reflection; 1.1.2 Characteristics, Recent Developments, and Progress; 1.1.3 Literature Reviews and Organization of the Chapter; 1.2 Carbon-Carbon Cross-Coupling Reactions Catalyzed by Palladium; 1.2.1 Classification and Overview; 1.2.2 Common Mechanistic Features of Cross-Coupling Reactions and Reactivity of the Substrates 1.2.2.1 Choice of the Carbon Electrophile1.2.2.2 Choice of the Carbon Nucleophile - What Makes the Difference?; 1.3 The Catalysts; 1.3.1 The Particular Features of Palladium; 1.3.2 Classes of Palladium Catalysts Applied to Cross-Coupling Reactions; 1.3.2.1 Ligands and Palladium Complexes - Homogeneous Systems; 1.3.2.2 Immobilized or Supported Palladium Complexes and Particles - Heterogeneous Systems; 1.3.2.3 Palladium Colloids and (Nonsupported) Nanoparticles; 1.3.2.4 Activity of Heterogeneous Catalysts; 1.4 Mechanistic Aspects 1.4.1 General Mechanism of C C Cross-Coupling and Heck Reactions with Homogeneous Catalyst Precursors1.4.2 Models for Heck and

Suzuki Reactions with Supported Pd Precursors; 1.4.3 Recent Results on the Reaction Mechanism and the Nature of the Active Pd Species; 1.4.3.1 Observation of Intermediates in Homogeneous Catalysis by Electrochemical Methods; 1.4.3.2 The Question of Pd Leaching; 1.4.3.3 Selectivity Pattern; 1.4.3.4 In Situ Observation by Spectroscopic Methods; 1.4.3.5 Immobilized Pd Pincer Complexes; 1.4.3.6 Palladium Bulk Materials (Pd Foil, Wire, Sponge) as Catalyst
1.5 Future ChallengesAbbreviations; References; 2 High-Turnover Heterogeneous Palladium Catalysts in Coupling Reactions: the Case of Pd Loaded on Dealuminated Y Zeolites; 2.1 Introduction; 2.2 Various Methodologies to Afford High Turnover Numbers Over Supported Pd Catalysts; 2.3 Structure and Characteristics of Ultrastable Y Zeolites; 2.4 Suzuki-Miyaura Reactions Catalyzed by Pd/USY; 2.4.1 Catalytic Performance of Pd/USY; 2.4.2 Pd Leaching from Pd/USY; 2.4.3 Selectivity in the Homocoupling Reactions; 2.4.4 Characterization of the Active Pd Species by X-Ray Absorption Spectroscopy
2.4.5 A Suggested Mechanism for the Formation of Active Pd Species in Suzuki-Miyaura Coupling Reactions2.5 Catalytic Performance of Pd/USY in Mizoroki-Heck Reactions; 2.5.1 Effect of H2 Bubbling on the Catalytic Reactions of Pd/USY; 2.5.2 Catalytic Reactions Using Chlorobenzene Derivatives; 2.5.3 Characterization of the Pd Species by X-Ray Absorption Spectroscopy; 2.6 Conclusion and Perspective; Abbreviations; References; 3 Palladium-Catalyzed Coupling Reactions with Magnetically Separable Nanocatalysts; 3.1 Introduction
3.2 General Considerations Concerning Magnetic Particles as Catalyst Supports

Sommario/riassunto

This handbook and ready reference brings together all significant issues of practical importance for interested readers in one single volume. While covering homogeneous and heterogeneous catalysis, the text is unique in focusing on such important aspects as using different reaction media, microwave techniques or catalyst recycling. It also provides a comprehensive treatment of modern-day coupling reactions and emphasizes those topics that show potential for future development, such as continuous flow systems, water as a reaction medium, and catalyst immobilization, among others. With i