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3.3.2 Catalytic Systems; 3.3.3 -Arylations of Esters; 3.3.4 -Arylations of Malonates and -Cyano Esters; 3.3.5 -Arylations of Ketones; 3.3.6 -Arylations of Amides; 3.3.7 -Arylations of Nitriles; 3.4 Summary and Conclusions; Abbreviations; References; 4 Copper-Catalyzed Arylations of Amines and Alcohols with Boron-Based Arylating Reagents; 4.1 Introduction
4.2 Discovery and Development of a New O-H Bond Arylation Reaction: From Stoichiometric to Catalytic in Copper4.3 Mechanistic Considerations; 4.4 Miscellaneous Applications; 4.4.1 Additional Applications with ArB(OH)(2); 4.4.2 Alternatives to ArB(OH)(2); 4.4.3 Alternatives to Phenols; 4.5 Development of a New N-H Bond Arylation Reaction; 4.5.1 Stoichiometric in Copper; 4.5.2 Alternatives to Boronic Acids; 4.6 Development of a New N-H Bond Arylation Reaction: Catalytic in Copper; 4.6.1 Proposed Mechanism; 4.6.2 Additional Important Non-N-H Arylation Examples; 4.7 Summary and Conclusions AbbreviationsReferences; 5 Metal-Catalyzed Arylations of Nonactivated Alkyl (Pseudo)Halides via Cross-Coupling Reactions; 5.1 Introduction; 5.2 Palladium-Catalyzed Arylations of Alkyl (Pseudo)Halides; 5.3 Nickel-Catalyzed Arylations of Alkyl (Pseudo)Halides; 5.4 Iron-Catalyzed Arylations of Alkyl (Pseudo)Halides; 5.5 Copper- and Cobalt-Catalyzed Arylations of Alkyl (Pseudo)Halides; Abbreviations; References; 6 Arylation Reactions of Alkynes: The Sonogashira Reaction; 6.1 Introduction; 6.2 Palladium-Catalyzed Reactions: Ligands and Reaction Protocols; 6.2.1 Phosphine-Based Ligands
6.2.1.1 Copper-Free Catalytic Systems

Sommario/riassunto

Today, arylation methods are belonging to the most important reaction types in organic synthesis. Lutz Ackermann, a young and ambitious professor has gathered a number of top international authors to present the first comprehensive book on the topic. Starting from a historical review, the book covers hot topics like Palladium-catalyzed arylation of N-H and alpha-C-H-acidic Bonds, Copper-catalyzed arylation of N-H and O-H Bonds, direct arylation reactions, carbanion aromatic synthesis, arylation reactions of alkenes, alkynes and much more. This compact source of high quality information