ABSTRACT

Palladium- and Copper-Catalyzed Processes for the Synthesis of Pharmaceutically-Relevant Molecules

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Cross-coupling methodology is an indispensable part of the everyday repertoire of synthetic organic chemists. In recent years the creation of new ligands has opened the way for the discovery of catalysts with ever increasing activity and scope. Crucial to our success in the development of new and more generally applicable methods has been the use of a new class of monodentate biaryl phosphine ligands. This lecture will detail our progress in formation of carbon-carbon, carbon-heteroatom and carbon-halogen bonds. Included will be: 1) Studies on structure-reactivity relationships of biaryl phosphine ligands and the catalyst systems based on them. 2) Mechanistic studies of both catalytic processes and stoichiometric model systems. 3) Our latest progress in the discovery of new catalysts and transformations of interest.