Gold-Catalyzed Oxidative C-H Arylation with Organoboron Reagents

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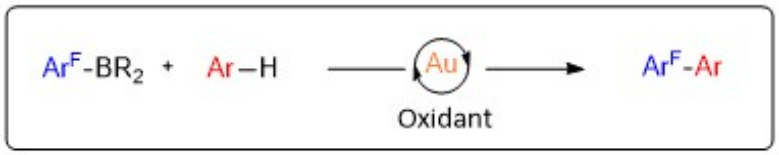
Direct C(sp^2)-H functionalization/arylation has attracted increasing interest since the substrates do not need to be functionalized in contrast to classical cross-coupling reactions.[1] Despite significant progress,[2] multiple challenges including low reactivity, lack of selectivity in the activation of an specific C(sp^2)-H bonds and formation of homocoupling products (Ar^1Ar^1, Ar^2Ar^2) are still difficult to master.[3] Herein, we report an efficient synthesis of biaryl compounds through a gold-catalyzed oxidative cross-coupling of arenes with strong electron-deprived aryl boronates. Non-symmetric biaryls can be synthesized with high levels of regio- and chemoselectivity under additives and directing groups-free conditions.[4] This methodology shows orthogonal reactivity and complementary scope with respect to already existing methods.[5]



Ar^F: Highly electron deficient
Ar: Non-activated

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