The Stille Carbonylative Cross-Coupling Reaction

Proposed catalytic cycle:

Selected examples:

Significance: Milstein and Stille reported a high-yielding palladium-catalyzed carbonylative coupling reaction of acid chlorides and organotin reagents. The reaction is very mild, does not require inert atmosphere and shows tolerance to a wide scope of functional groups.

Comment: Notably, aryltin groups are transferred in preference to alkyltin groups. The authors also showed that a second organic group attached to the tin can be transferred, however at a notably slower rate.