S. B. BLAKEY, D. W. C. MACMILLAN^{*} (CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA, USA) The First Suzuki Cross-Couplings of Aryltrimethylammonium Salts

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The First Use of Aryltrimethylammonium Salts in Nickel-Catalyzed Suzuki Cross-Couplings



Significance: Transition-metal-catalyzed crosscoupling reactions continue to represent a route for C–C bond formation. In 2003, MacMillan and Blakey reported the Suzuki cross-coupling reaction of aryltrimethylammonium triflates. During their investigations, authors found that while palladium catalysts were unsuccessful for the coupling, the use of an NHC-Ni(0) complex successfully catalyzed the transformation. This report represented the first catalyst system that was efficient in activating aryl-ammonium bonds. **Comment:** The reaction generated products with yields ranging from 82–98%. The authors included examples using electron-rich ammonium salts, typically less susceptible to oxidative addition, and various electronically and sterically different arylboronic acids and esters. The use of trialkyl-ammonium triflates continue serve as valuable coupling partners in many cross-coupling reactions.

Category

Metals in Synthesis

Key words

nickel catalysis

Suzuki crosscoupling

trialkylammonium salts

