Fe-Catalyzed Cross-Coupling of Alkyl Halides with Alkynyl Grignard Reagents

**Significance:** The authors report a novel coupling of primary and secondary alkyl halides with alkynyl-magnesium reagents with iron catalysis. The use of a bisphosphine ligand bearing peripheral steric bulk as well as slow addition of the Grignard reagent suppress undesired side reactions.

**Comment:** By using starting materials with two potential reactive sites, for example C(sp<sup>3</sup>)–Br and C(sp<sup>3</sup>)–OTf, and applying the reported iron-catalyzed cross-coupling with an alkynyl Grignard reagent, the C(sp)–C(sp<sup>3</sup>)-coupled products are obtained in excellent yields.