Magnetic Pd- and CuO-Catalyzed Regioselective Direct Arylation of Anilides

**Significance:** Magnetite-supported copper oxide (CuO/Fe$_3$O$_4$) or palladium nanoparticles (Pd/Fe$_3$O$_4$) catalyzed the regioselective direct arylation of anilides with diaryliodonium triflates in 1,2-dichloroethane. CuO/Fe$_3$O$_4$ exclusively afforded the meta arylation products in up to 99% yield, whereas Pd/Fe$_3$O$_4$ gave ortho arylation products in up to 89% yield.

**Comment:** In the direct arylation of N-(o-toly)pivalamide with diphenyliodonium triflate, CuO/Fe$_3$O$_4$ was magnetically recovered and reused four times without loss of its catalytic performance. On the other hand, the catalytic activity of Pd/Fe$_3$O$_4$ decreased after one recycling. Hot filtration tests and TXRF analysis indicated that catalytically active soluble species were generated in situ from CuO/Fe$_3$O$_4$ and Pd/Fe$_3$O$_4$ during the reaction.