Electrophilic Amination of Diorganozinc Reagents Using N-Hydroxylamine Benzoates

Significance: In 2004, Berman and Johnson developed the first electrophilic amination of N-hydroxylamine benzoates using diorganozinc reagents in the presence of [Cu(OTf)]_2·C_6H_6. This umpolung-type reaction allowed access to a broad range of highly functionalized secondary and tertiary amines under mild conditions.

Comment: The outstanding performance of N-hydroxylamine benzoates as electrophilic nitrogen sources has inspired various following publications, opening up new opportunities for amination reactions. Based on experimental studies, the authors excluded an oxidative addition/reductive elimination pathway and proposed a S_N2-type pathway. For further insights into electrophilic aminations based on this pioneering work, see: Synthesis 2011, 24, 3954–3964.