F. VALLÉE, J. J. MOUSSEAU, A. B. CHARETTE* (UNIVERSITÉ DE MONTRÉAL, CANADA)
Iron-Catalyzed Direct Arylation through an Aryl Radical Transfer Pathway
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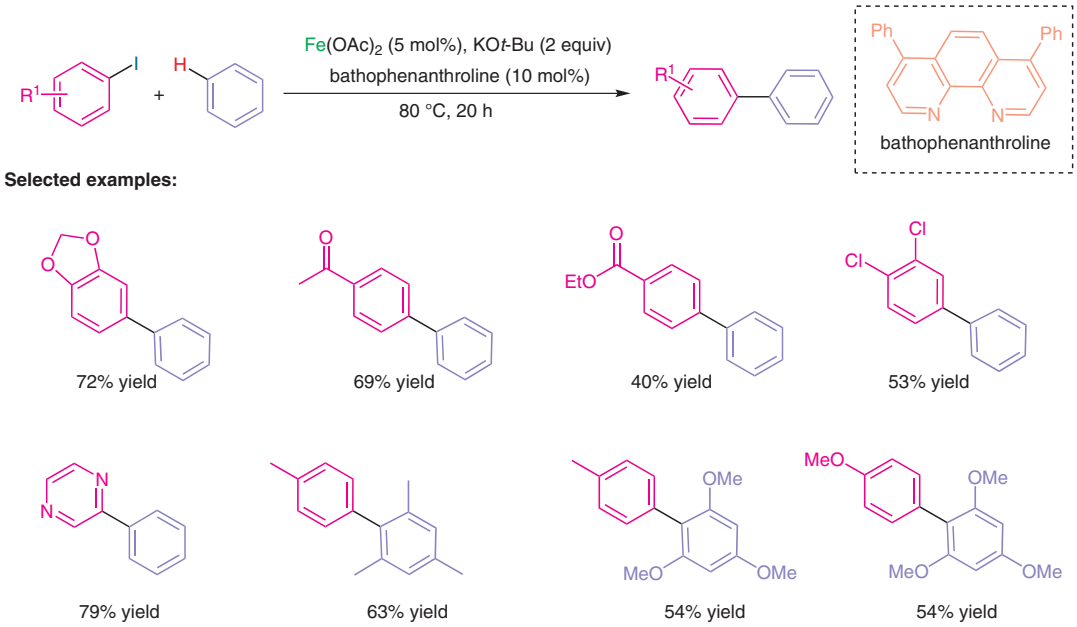
Iron(II)-Catalyzed Radical Arylation of Arenes with Aryl and Heteroaryl Iodides



Significance: Herein, the authors report a direct, high-yielding, mild, and versatile iron-catalyzed arylation of unactivated arenes with aryl and heteroaryl iodides. The iron catalyst is used in a low amount (5 mol%). The reaction does not require the presence of a directing group and is tolerant to the presence of functional groups in the substrates.

Comment: Mechanistic evidence suggests that the reaction proceeds via an iron-catalyzed radical process (metal-catalyzed radical direct arylation). The reaction is practically not sensitive to steric hindrances. The rather high price of the bathophenanthroline ligand is the only drawback of this otherwise excellent synthetic method.

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Category

Metal-Mediated Synthesis

Key words

biaryls

radical arylation

iron

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