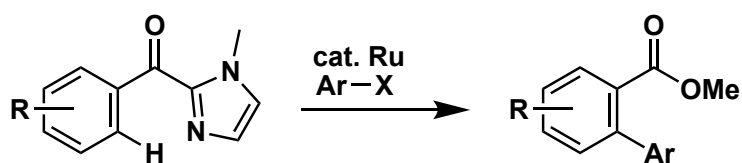


## Ruthenium(II)-Catalyzed Arylation of 2-Aroyl-Imidazoles with Aryl Halides

(Faculty of Engineering, Osaka University) ○Chen-an Wang, Naoto Chatani

**Keywords:** Ruthenium Catalyst; Carbon-Hydrogen Bond Cleavage; Acyl Imidazole; Arylation

Transition-metal-catalyzed C–H functionalization reactions is one of the successful strategies for the construction of carbon–carbon bonds.<sup>1</sup> In 2012, Ackermann reported the ruthenium-catalyzed C–H arylation reaction of phenols with aryl halides via six-membered ruthenacycles.<sup>2</sup> Dixneuf subsequently reported the ruthenium-catalyzed C–H arylation reaction of 2-pyridyl ketones with aryl bromides via six-membered ruthenacycles.<sup>3</sup> Herein, we report the ruthenium-catalyzed arylation of *ortho*-C–H bonds of 2-aroyl-imidazoles with aryl halides via six-membered ruthenacycles, in which an imidazole ring function as a directing group. The imidazole moiety is known to easily be converted into the corresponding esters, amides, thioester, and carboxylic acid.<sup>4</sup> Various functional groups, such as methoxy, fluoro, trifluoromethyl, ester and ketone groups can be tolerated in the preset reaction.



1) Reviews: (a) Gandeepan, P.; Müller, T.; Zell, D.; Cera, G.; Warratz, S.; Ackermann, L. *Chem. Rev.* **2019**, *119*, 2192. (b) Rej, S.; Ano, Y.; Chatani, N. *Chem. Rev.* **2020**, *120*, 1788.

2) Ackermann, L.; Diers, E.; Manvar, A. *Org. Lett.* **2012**, *14*, 1154.

3) Li, B.; Darcel, C.; Dixneuf, P. H. *ChemCatChem* **2014**, *6*, 127.

3) Xin, H.-L.; Pang, B.; Choi, J.; Akkad, W.; Morimoto, H.; Ohshima, T. *J. Org. Chem.* **2020**, *85*, 11592.