



Université de Montréal, Montréal, QC, Canada

THIRD INTERNATIONAL SYMPOSIUM  
ON C-H ACTIVATION

May 30 – June 2, 2016

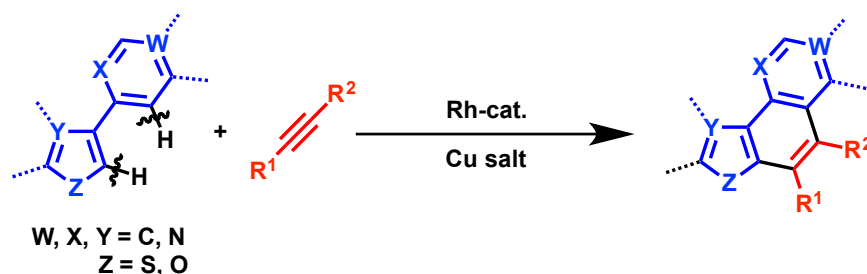
OR13 – Construction of Benzo-fused Heteroarenes by Rhodium-Catalyzed Dehydrogenative Annulation

Masahiro Miura\*

Department of Applied Chemistry, Graduate School of Engineering, Osaka University, Suita, Osaka 565-0871, Japan

E-mail: miura@chem.eng.osaka-u.ac.jp

Benzo-fused heteroarene frameworks exist in various organic materials and pharmaceuticals. Therefore, development of straightforward and effective synthetic methods leading to them is of fundamental importance. Among the most promising strategies is the transition metal-catalyzed dehydrogenative annulation of aromatic substrates possessing a directing group with alkynes and alkenes through regioselective C–H bond cleavage.<sup>1</sup> Besides  $\sigma$ -coordinating functions involving oxygen, nitrogen, sulfur, and phosphorus atoms,  $\pi$ -electron units such as alkenyl, alkynyl, and aryl functions have been found to act as directing groups for ortho C–H functionalization. Thus, it may be conceived that highly fused polycyclic heteroarenes can be easily prepared by employing the  $\pi$ -coordination mode. In this symposium, we report such annulation reactions on arylated heteroarenes and related substrates under rhodium(III) catalysis.<sup>2-4</sup>



References

1. Miura, M.; Satoh, T.; Hirano, K. *Bull. Chem. Soc. Jpn.* **2014**, *87*, 751-764 and references therein.
2. Iitsuka, T.; Hirano, K.; Satoh, T.; Miura, M. *J. Org. Chem.* **2015**, *80*, 2804-2814.
3. Morioka, R.; Nobushige, K.; Satoh, T.; Hirano, K.; Miura M. *Org. Lett.* **2015**, *17*, 3130-3133.
4. Unoh, Y.; Satoh, T.; Hirano, K.; Miura M. *ACS Catal.* **2015**, *5*, 6634-6639.