

LITERATURE REPORT

Diazo and N-Tosylhydrazones: Noel Cross-Coupling Partners in Transition Metal Catalyzed Reaction

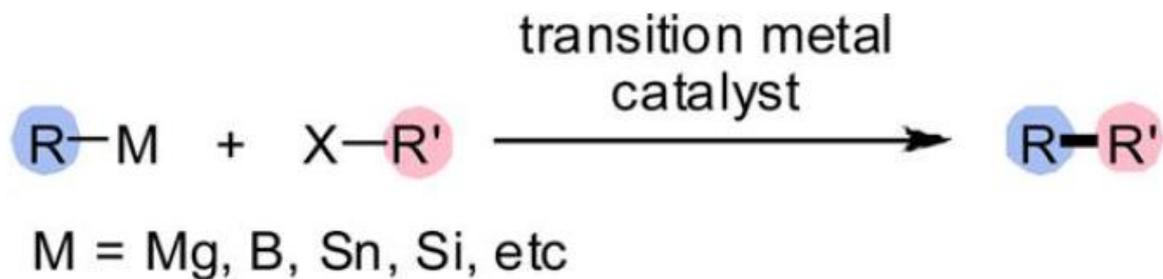
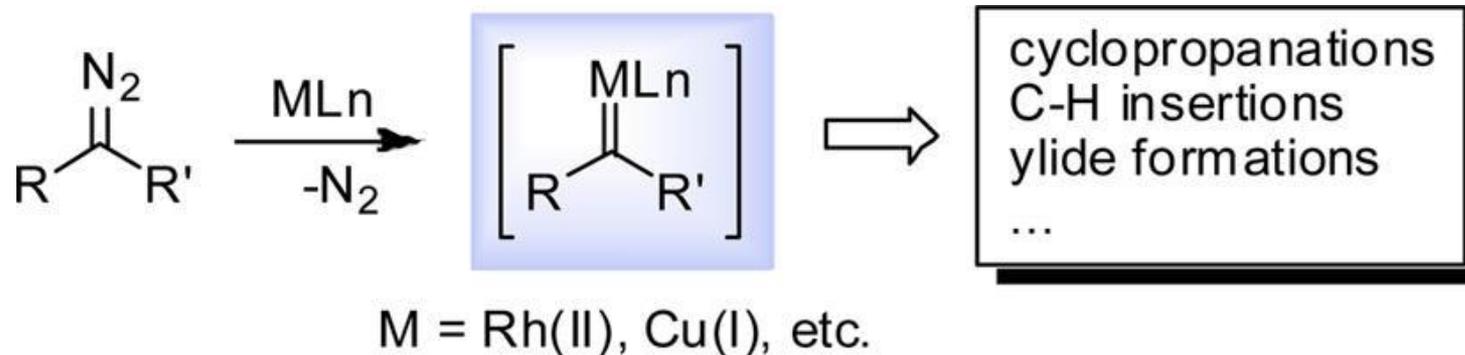
Reporter: He Zhiqi
Supervisor: Prof. Yong Huang
2013.07.01

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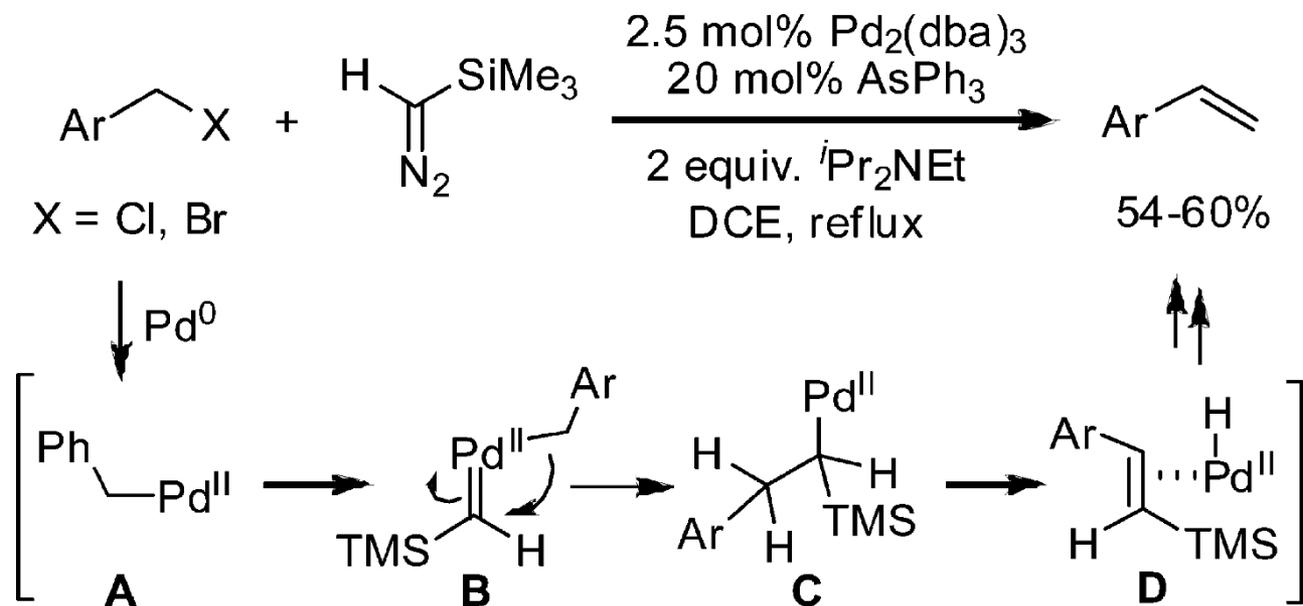
J. Wang, *et al. Acc. Chem. Res.* **2013**, 46, 236.

1. Introduction:

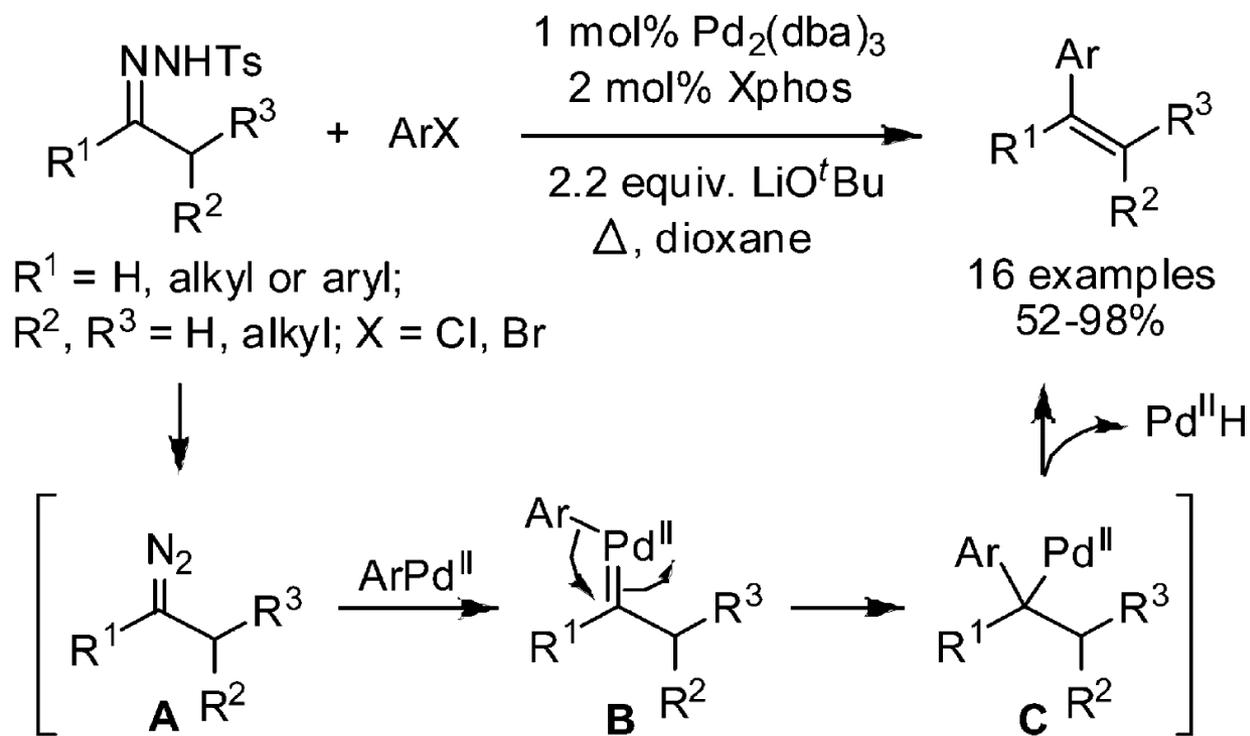


2. 1 Pd catalyzed cross-coupling with diazo compounds

Early studies:

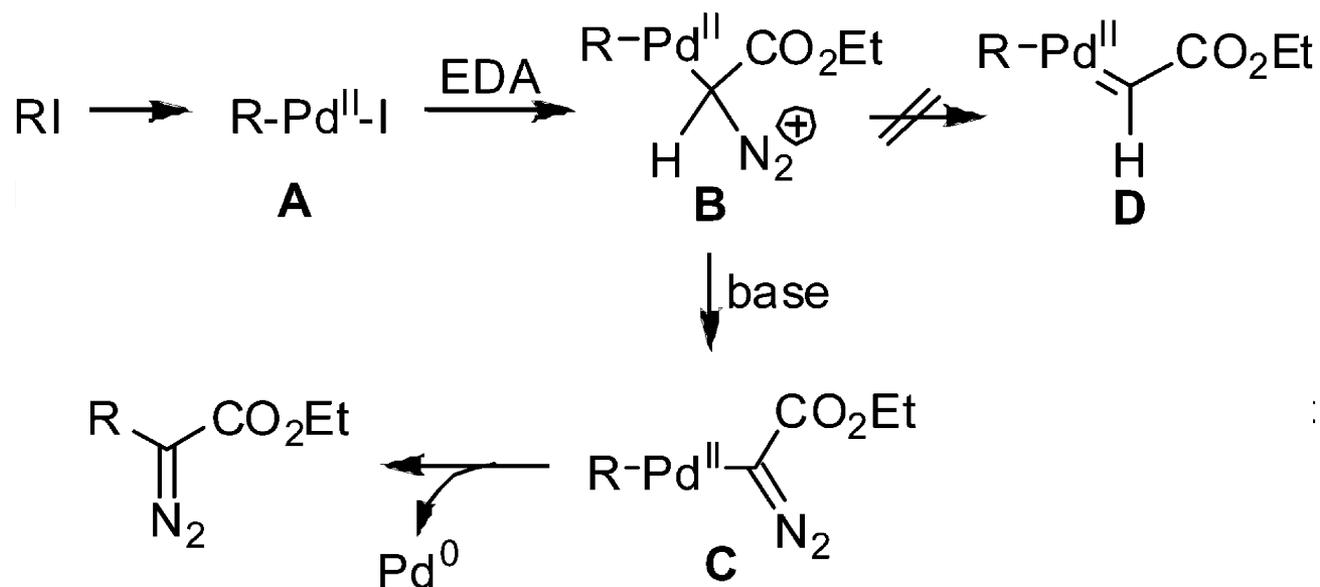
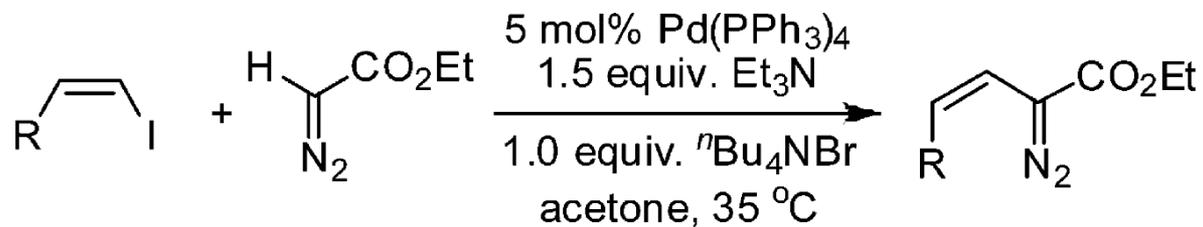


D. L. Van Vranken, *et al.* *Tetrahedron*, **2001**, 57, 5219.



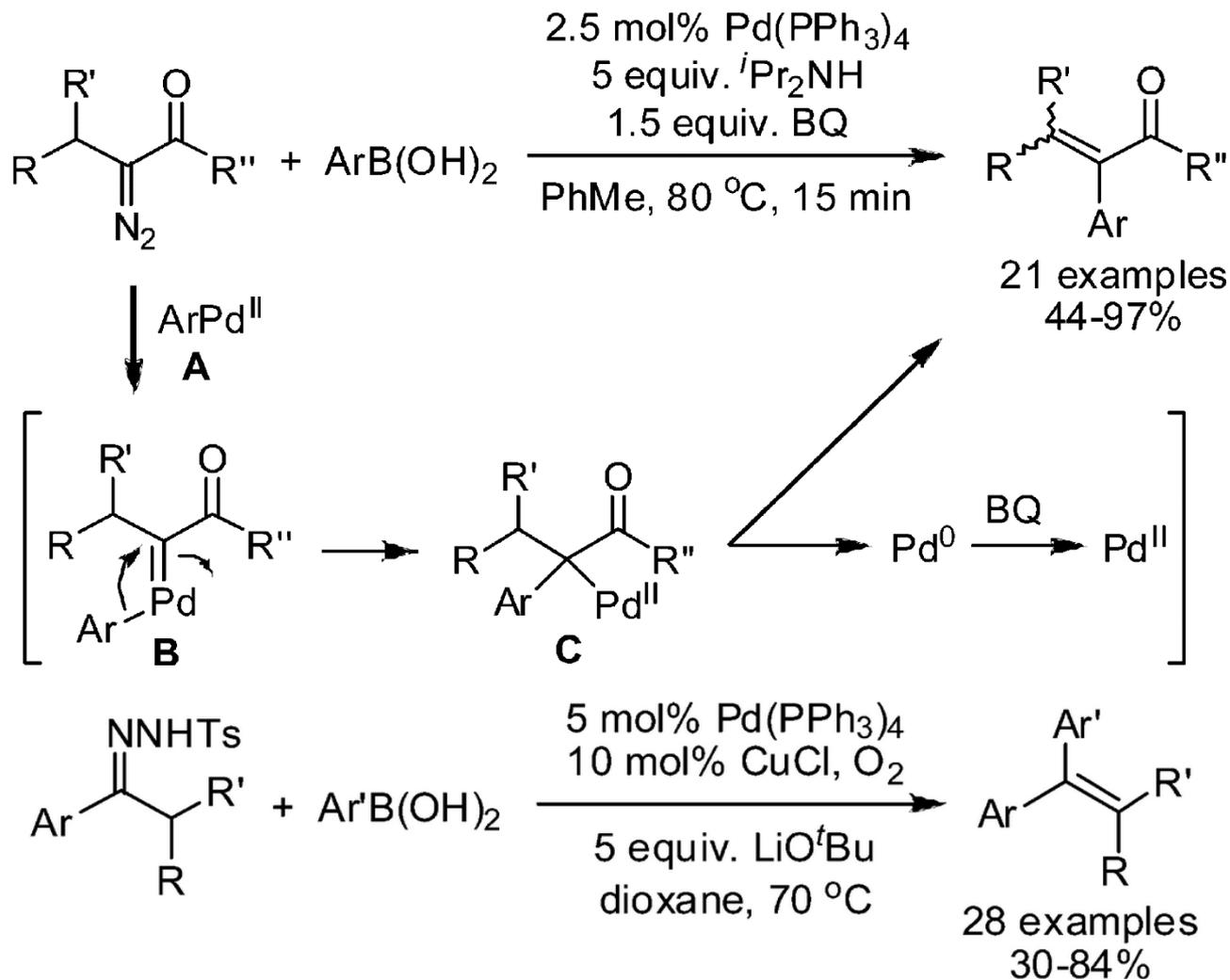
J. Barluenga, *et al.* *Angew. Chem., Int. Ed.* **2007**, *46*, 5587.

Cross-coupling with aryl- or vinylhaldes



J. Wang, *et al.* *J. Am. Chem. Soc.* **2007**, *129*, 8708.

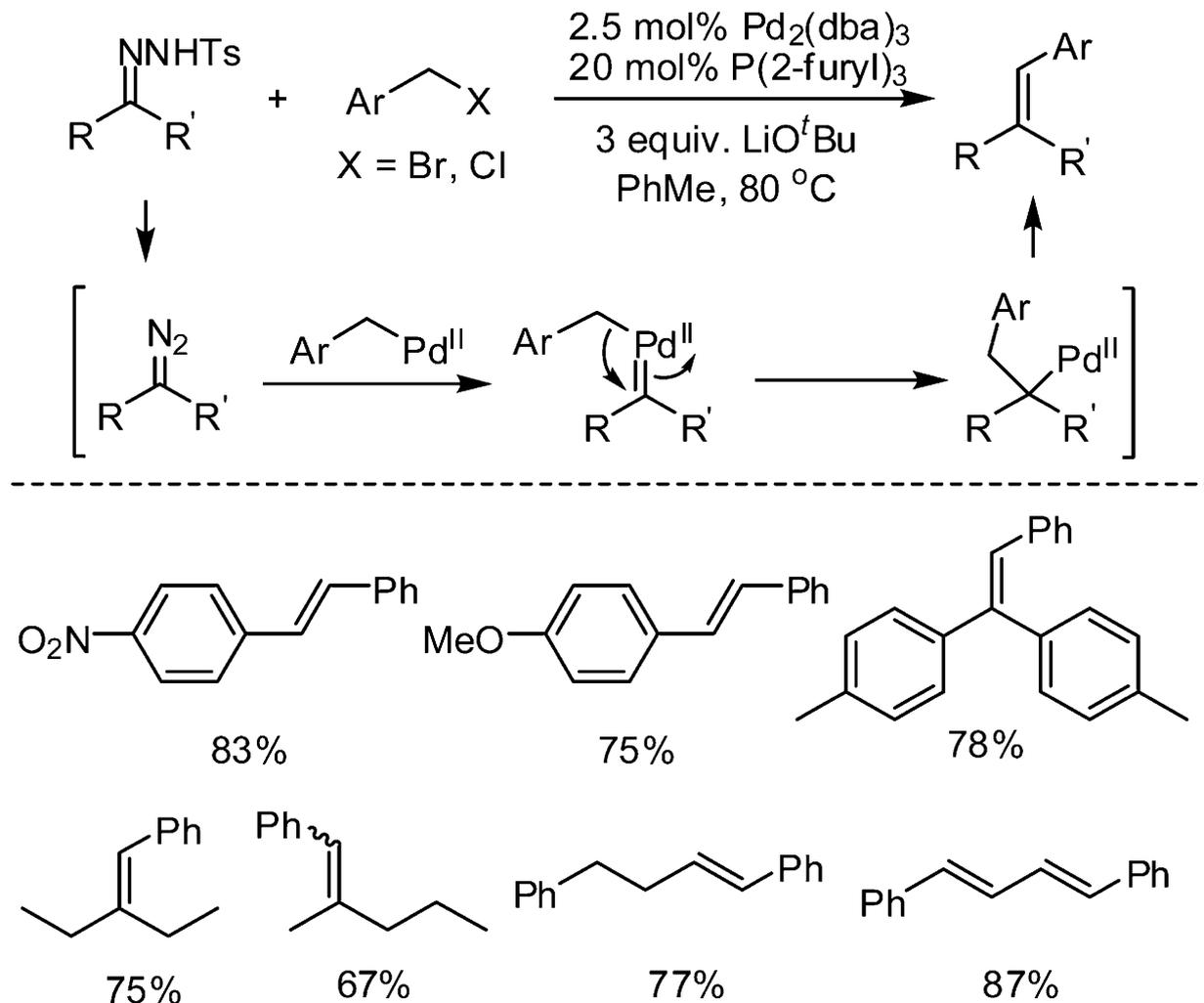
Cross-coupling with arylboronic acids



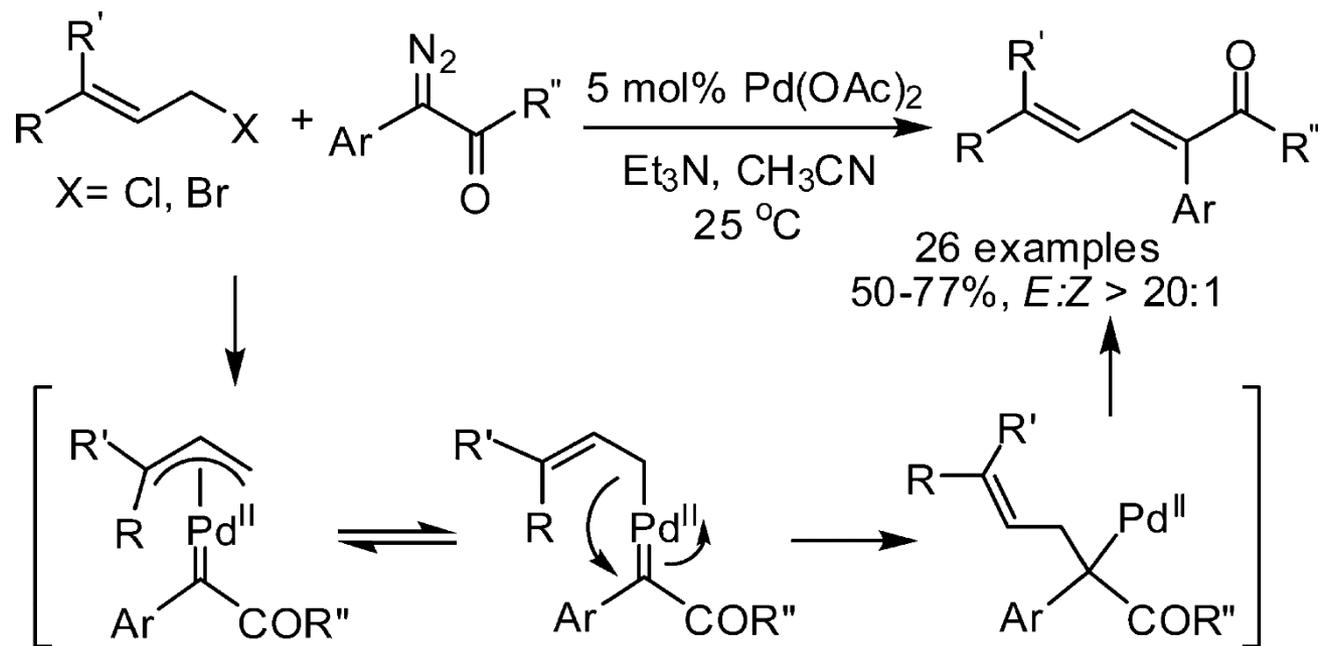
J. Wang, *et al.* *J. Am. Chem. Soc.* **2008**, *130*, 1566.

J. Wang, *et al.* *Chem Commun.* **2010**, *46*, 1724.

Cross-coupling with benzyl halides and allyl halides

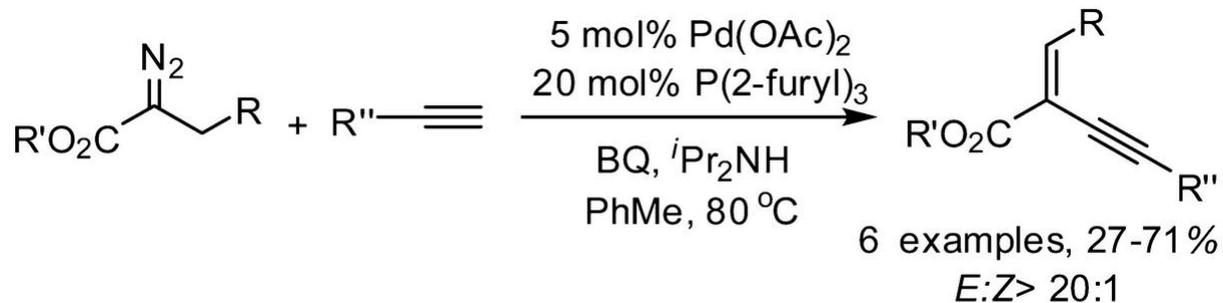
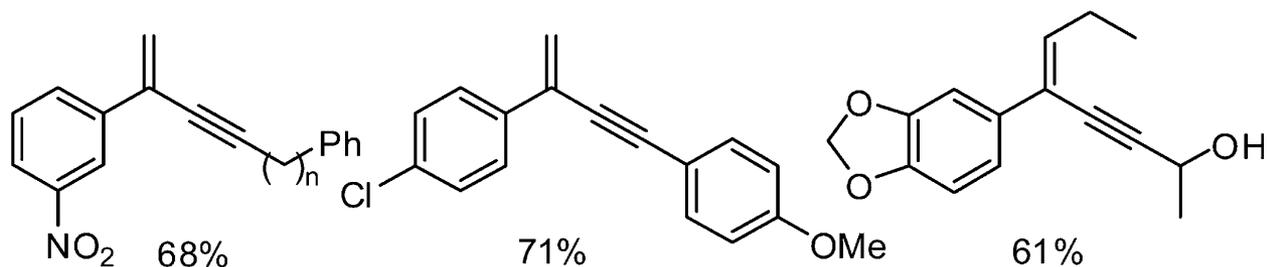
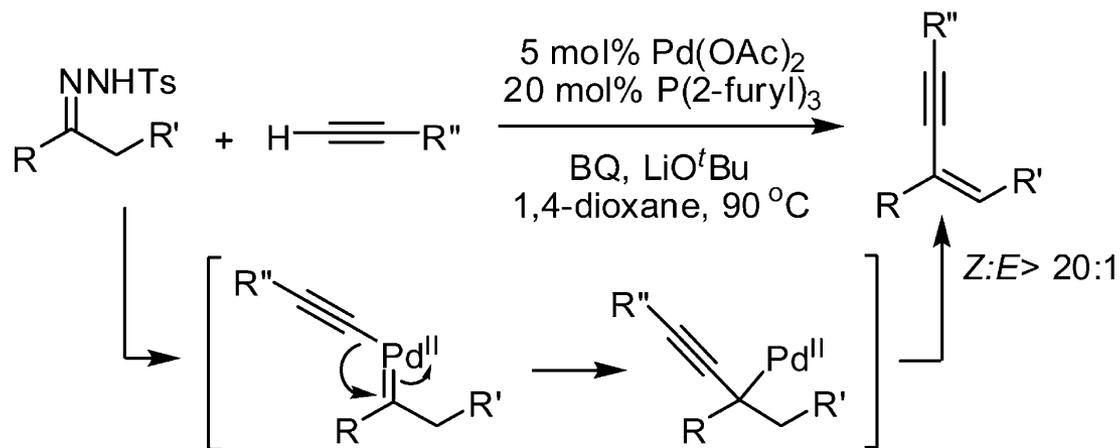


J. Wang, *et al. Org. Lett.* **2009**, *11*, 4732



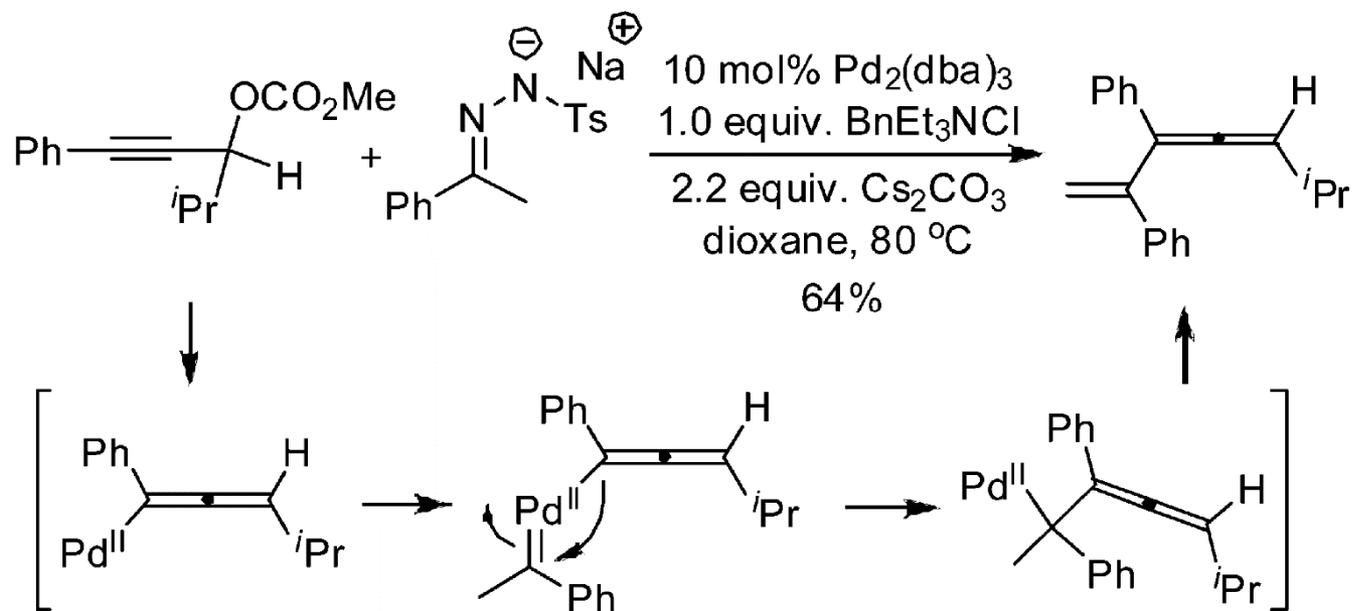
J. Wang, *et al.* *Chem Commun.* **2008**, 44, 4198

Cross-coupling with terminal alkynes



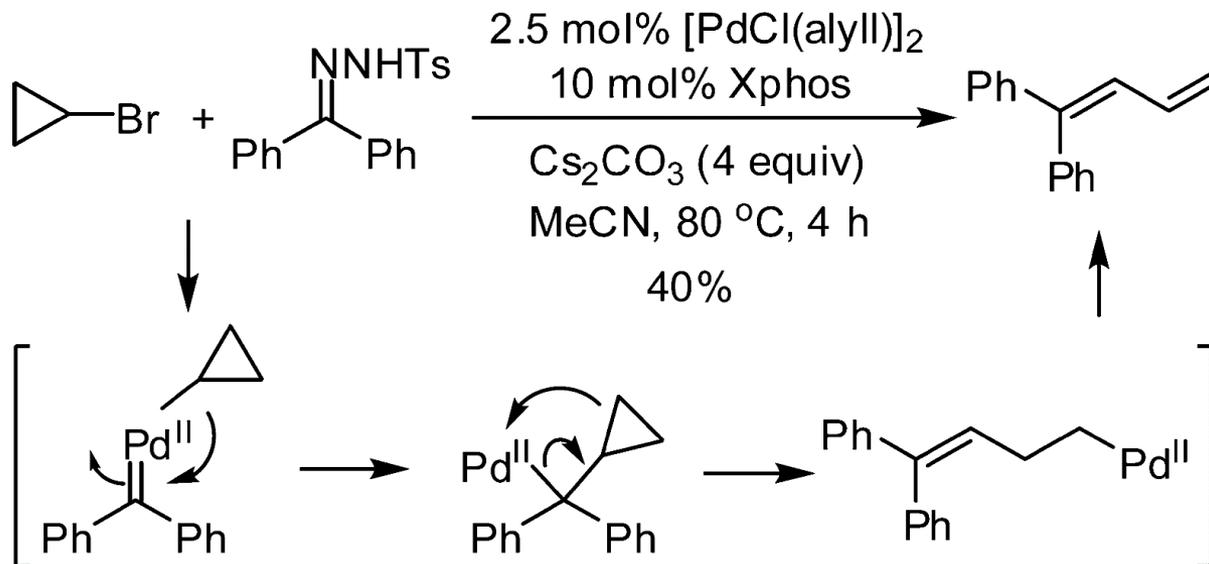
J. Wang, *et al. Angew. Chem., Int. Ed.* **2011**, *50*, 3510.

Migratory insertion of allenyl group



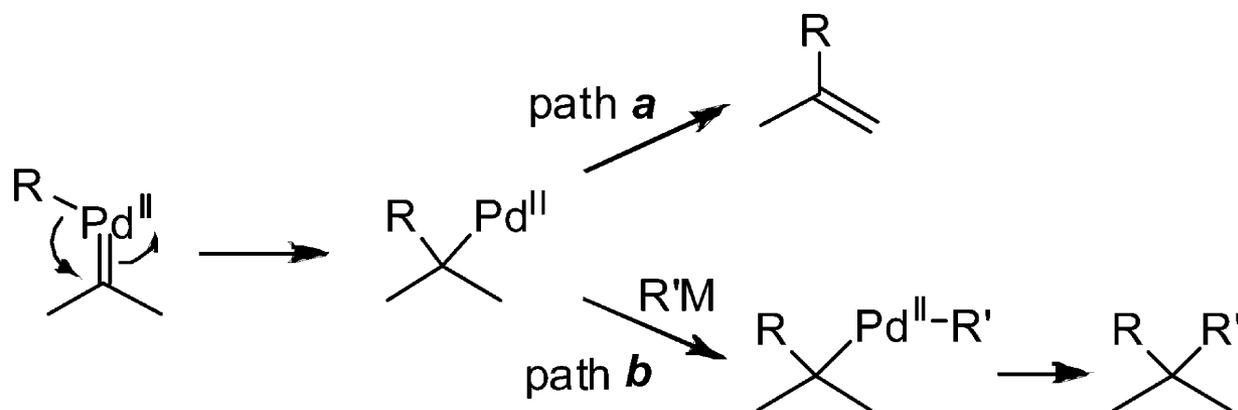
Y-M. Liang, *et al. Chem.--Eur. J.* **2011**, *17*, 6918.

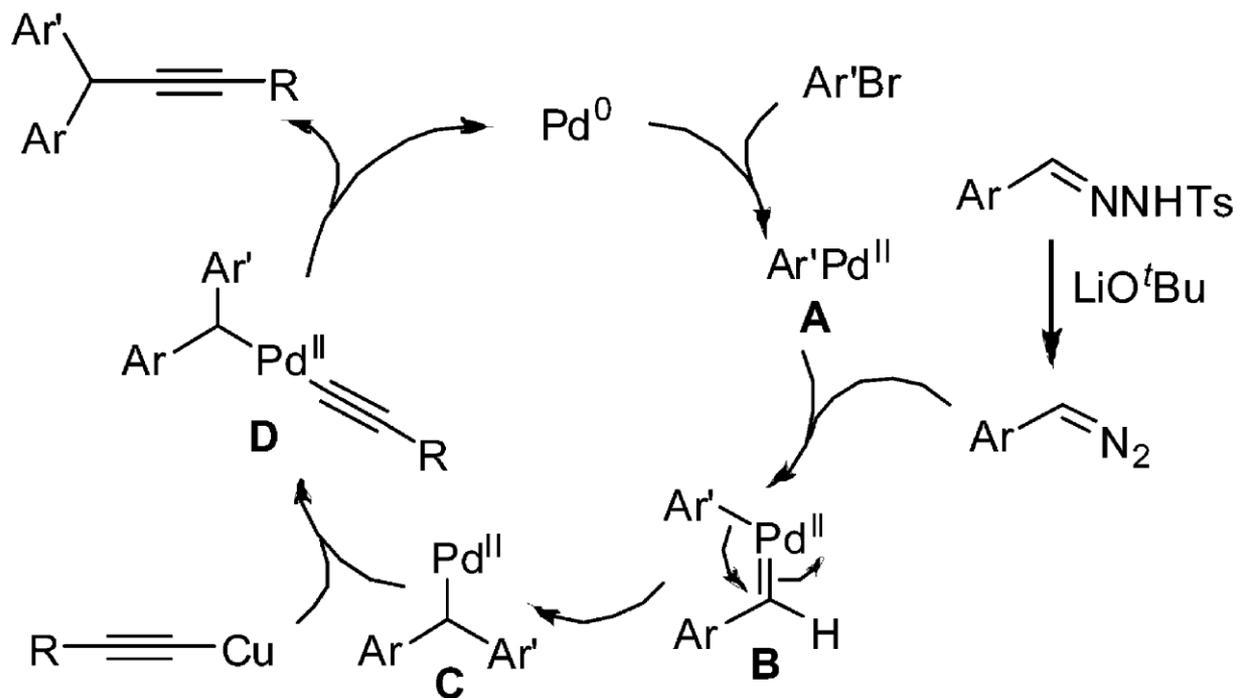
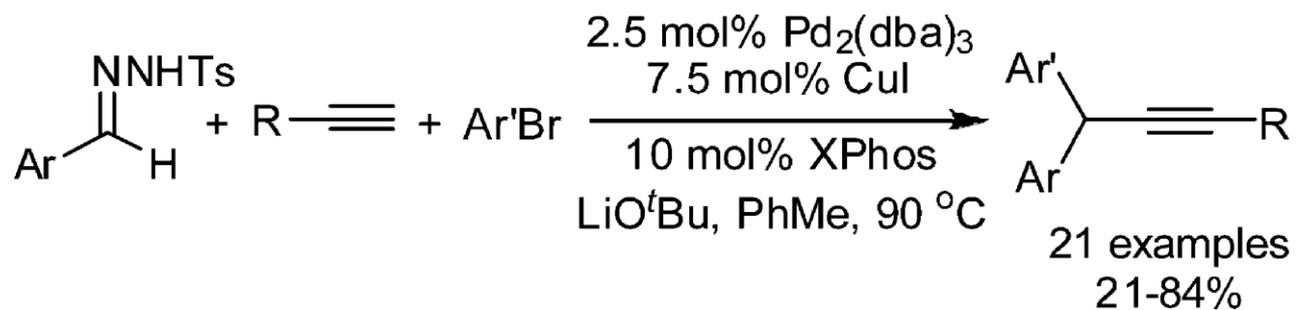
Migratory insertion of cyclopropyl groups

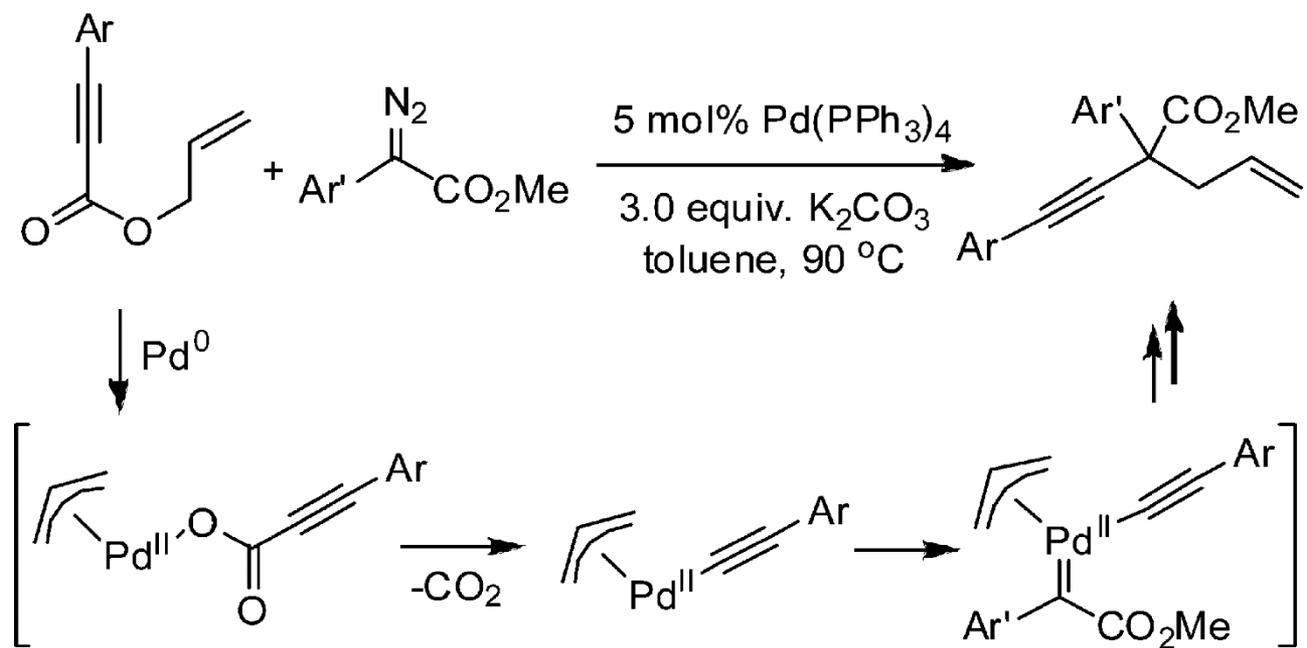


J. Wang, *et al. Org. Lett.* **2012**, *14*, 922.

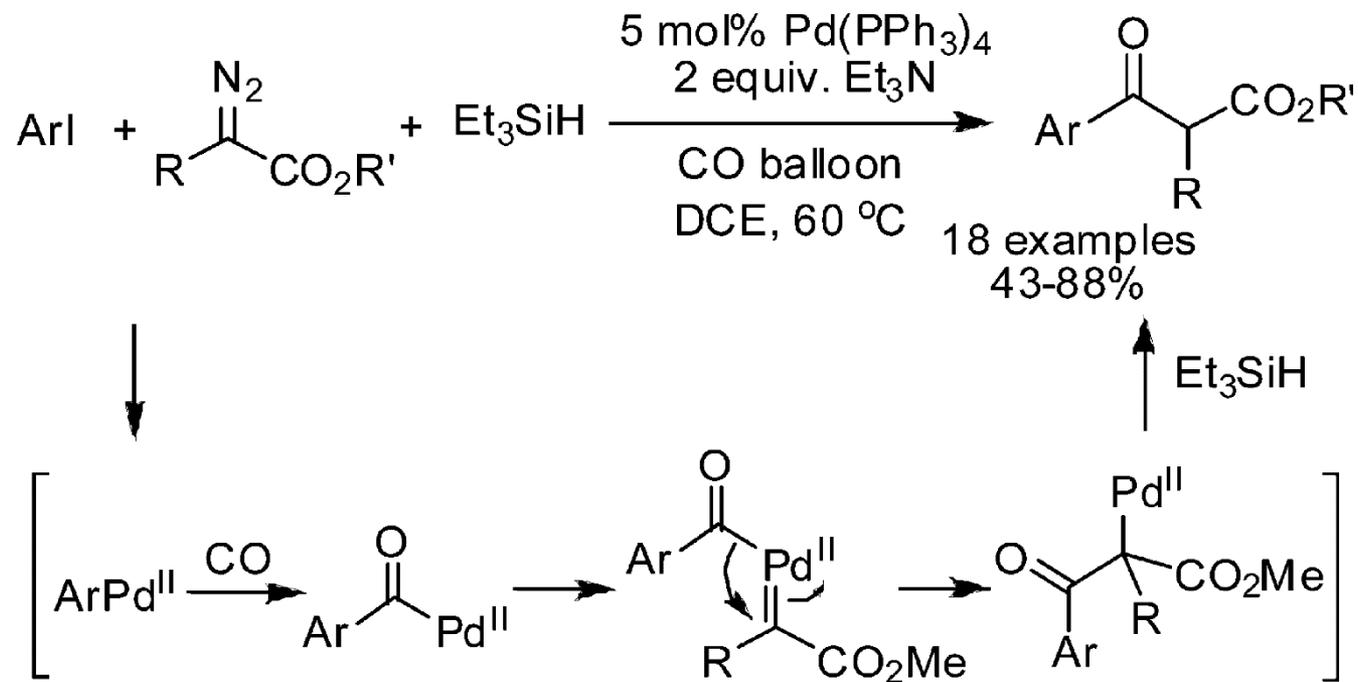
2.2 Pd catalyzed multi-component cross-coupling reaction



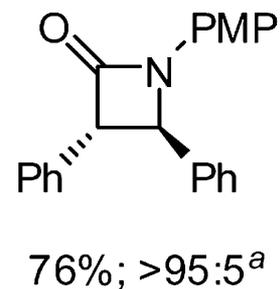
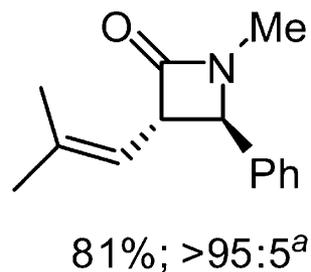
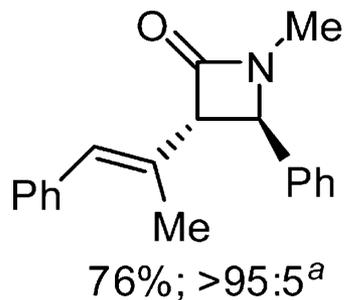
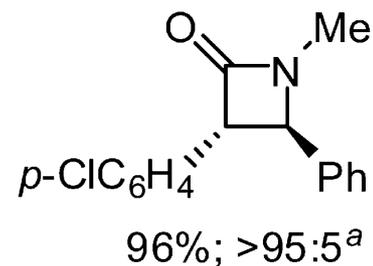
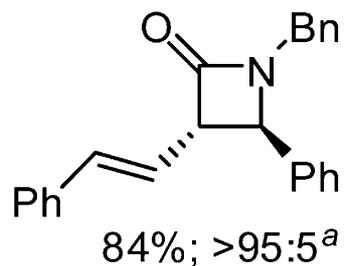
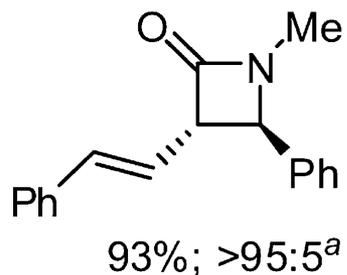
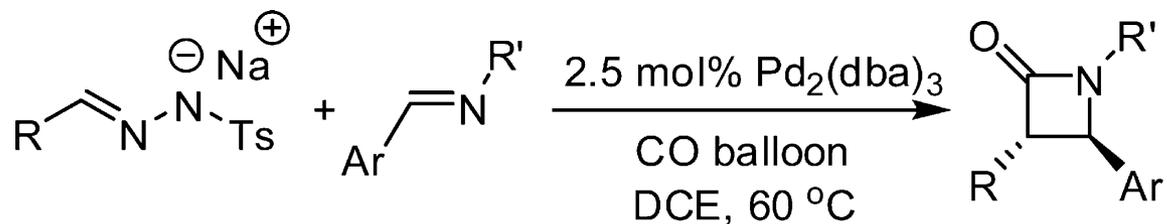




Y-M. Liang, *et al. Angew. Chem., Int. Ed.* **2012**, *51*, 1370.

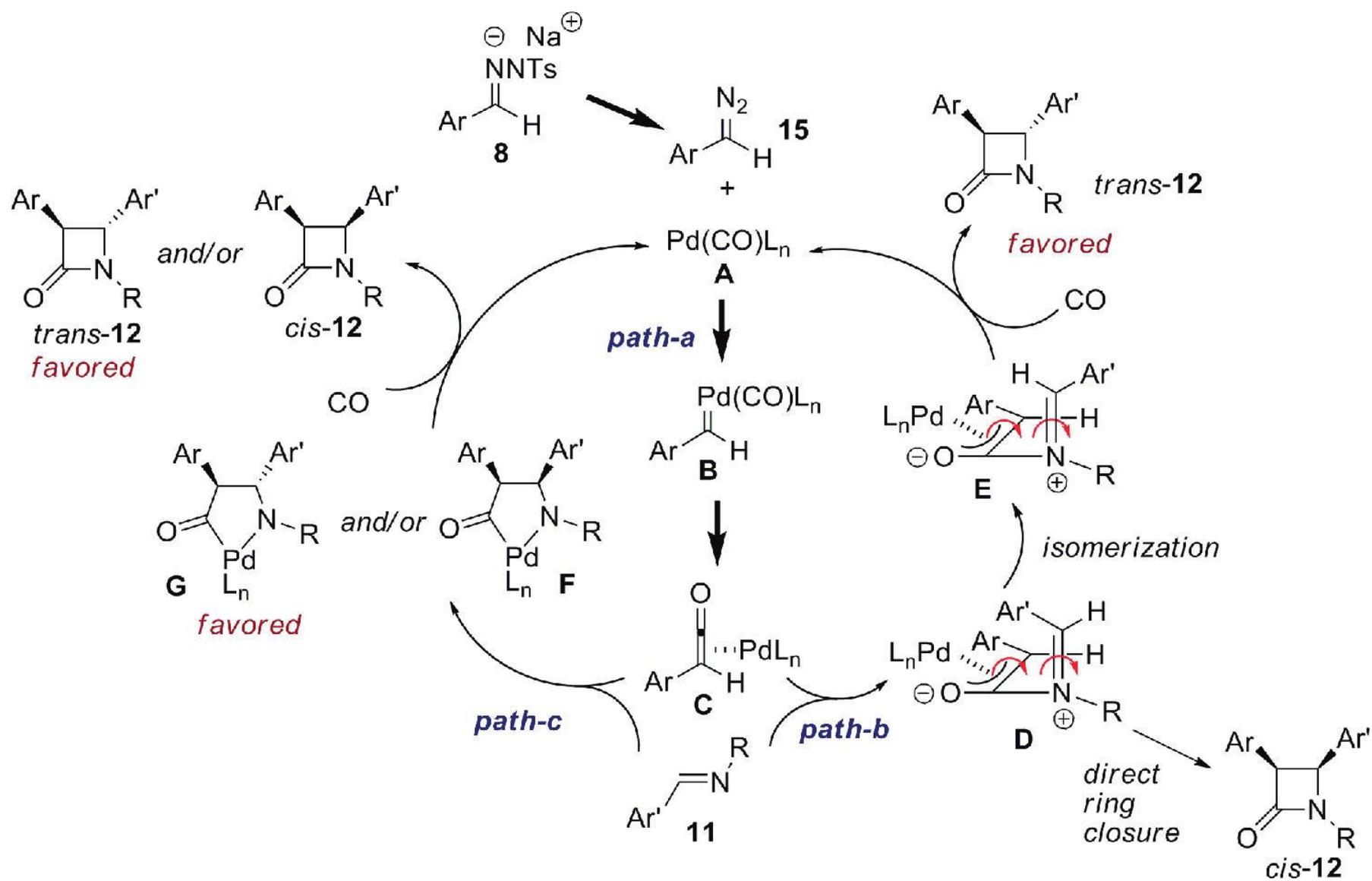


J. Wang, *et al.* *Angew. Chem., Int. Ed.* **2010**, *49*, 1139.

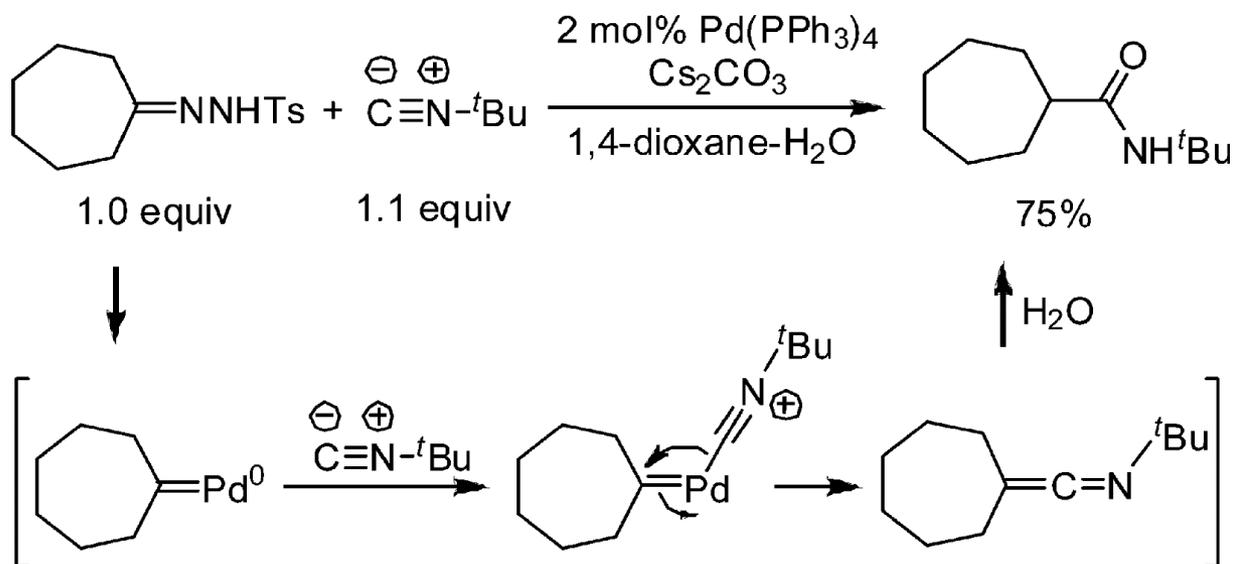


^a*trans* to *cis* ratio; PMP: *p*-MeOC₆H₄-

J. Wang, *et al.* *J. Am. Chem. Soc.* **2011**, *133*, 4330.

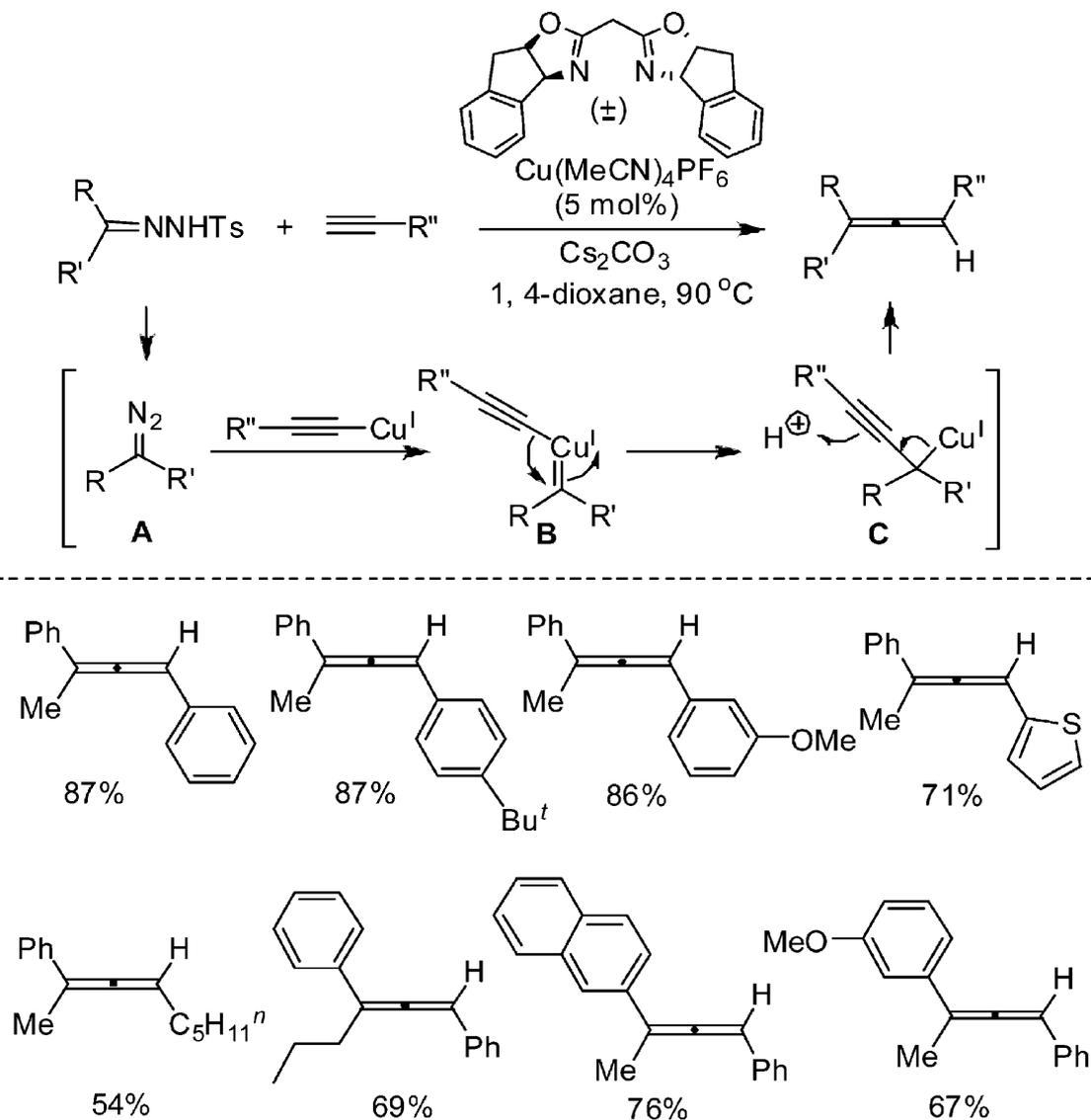


J. Wang, et al. *J. Am. Chem. Soc.* **2011**, *133*, 4330.



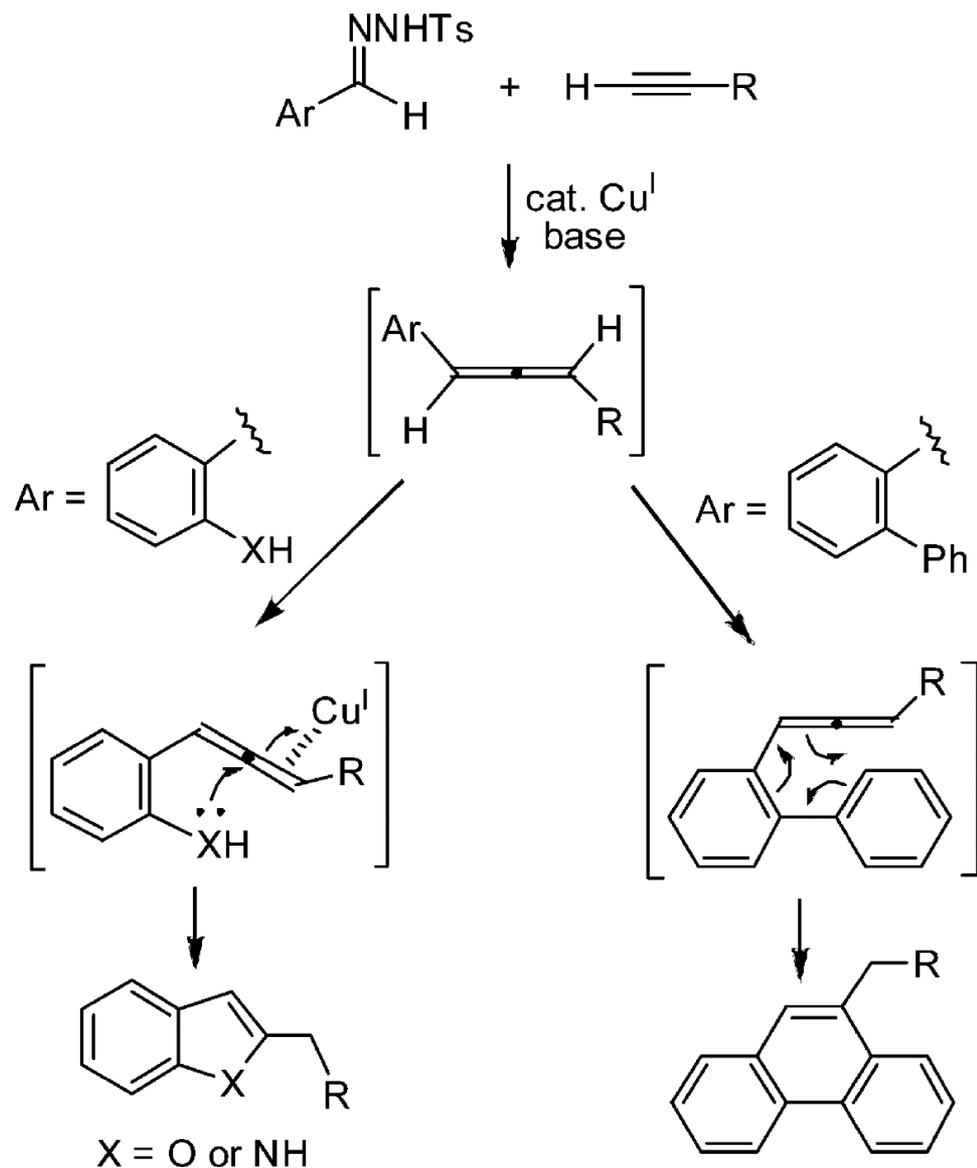
Q. Cai, *et al. Chem.--Eur. J.* **2011**, *17*, 12268

2. cross-coupling reaction catalyzed by other Metals



J. Wang, *et al. Angew. Chem., Int. Ed.* **2011**, *50*, 1114.

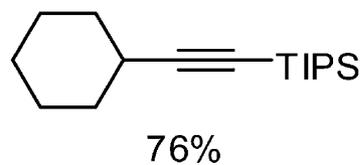
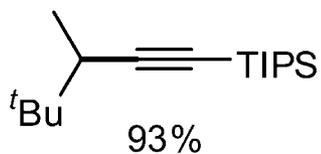
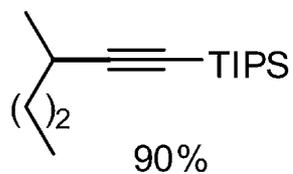
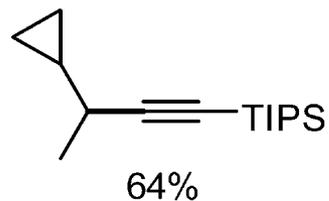
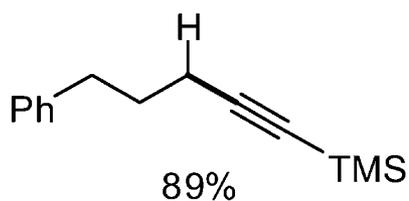
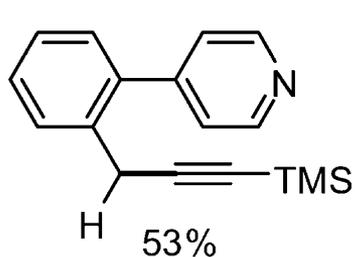
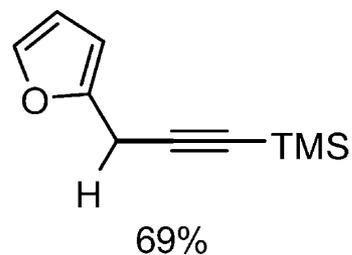
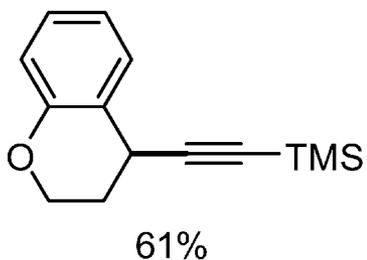
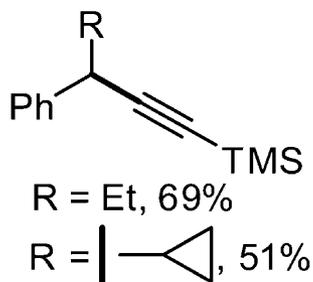
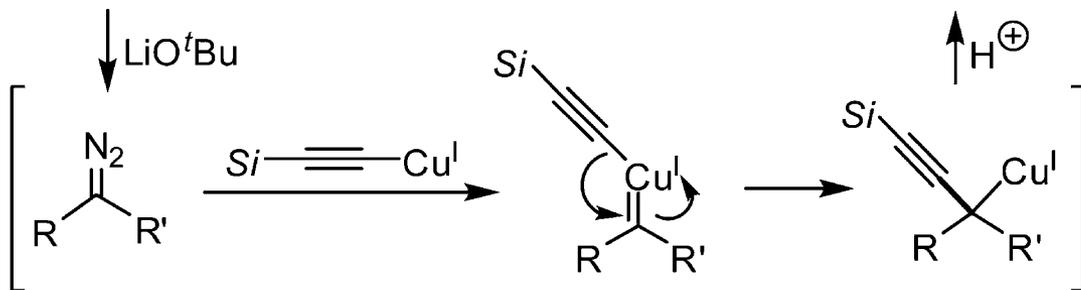
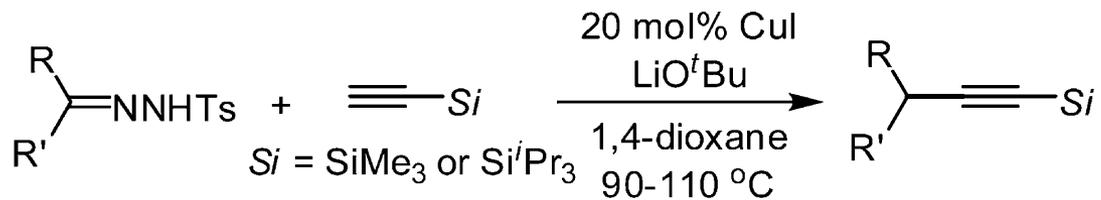
J. M. Fox, *et al. Org. Lett.* **2011**, *13*, 2388.



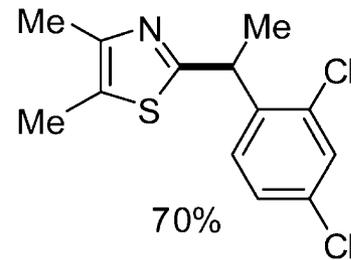
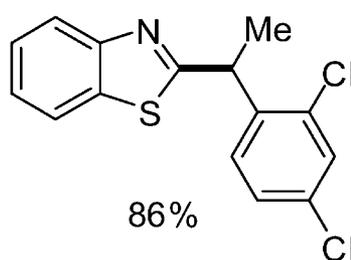
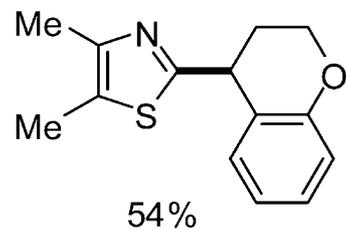
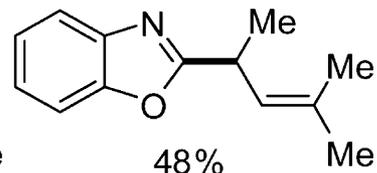
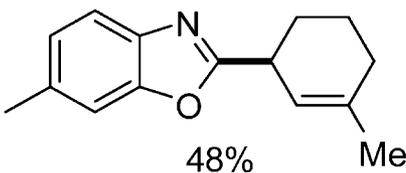
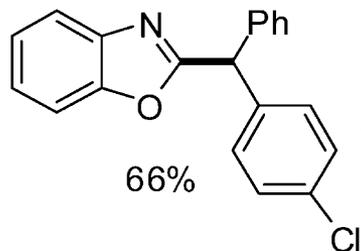
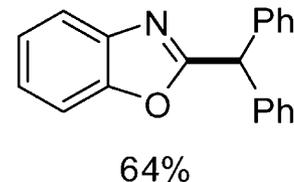
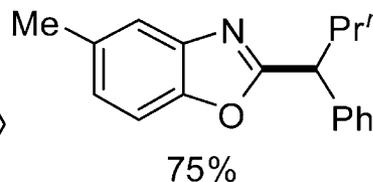
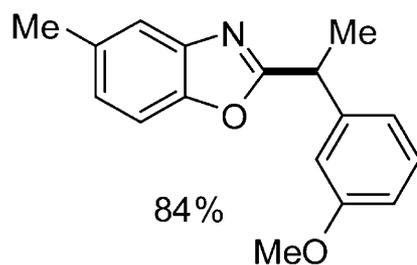
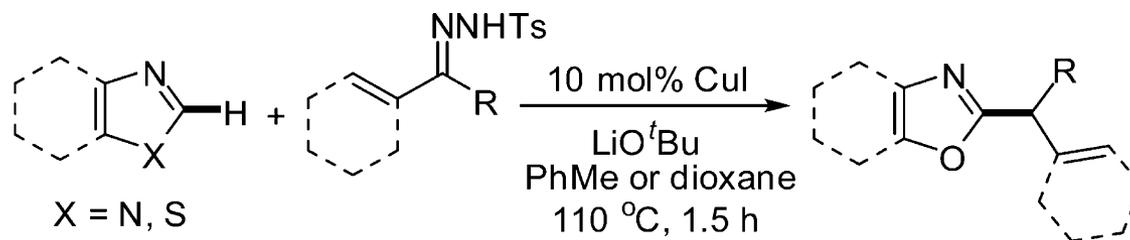
J. Wang, *et al. Tetrahedron Lett.* **2011**, 52, 5484.

J. Wang, *et al. Org. Lett.* **2011**, 13, 968.

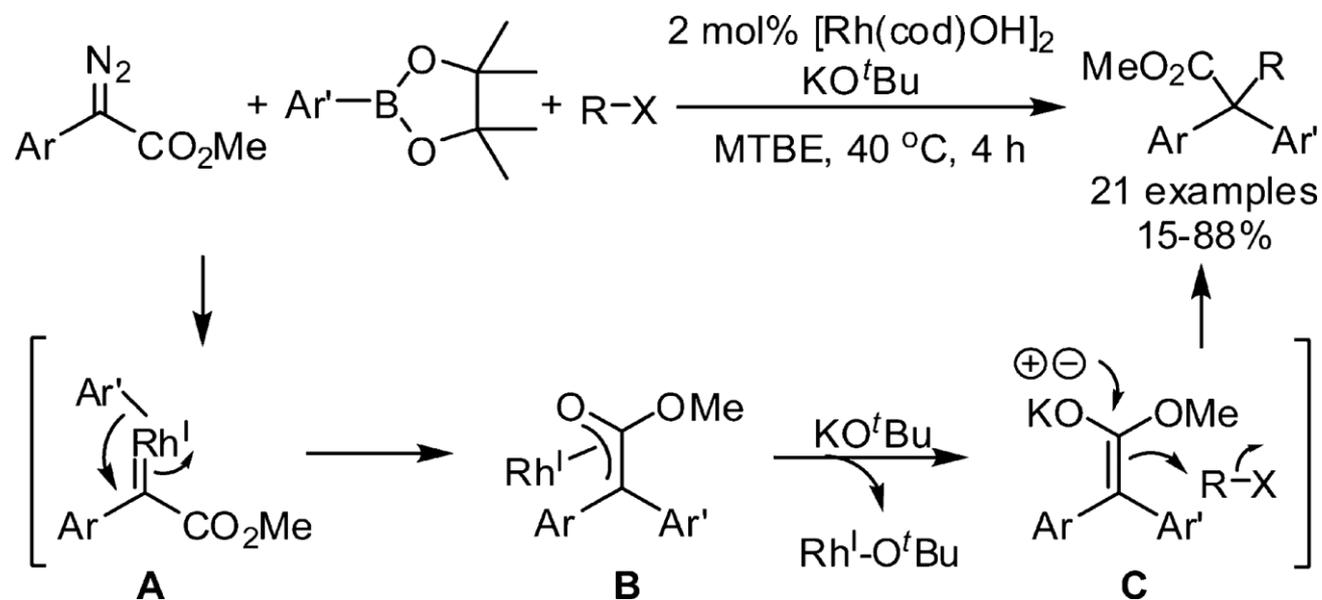
J. Wang, *et al. Org. Lett.* **2011**, 13, 5020.



J. Wang, *et al.* *J. Am. Chem. Soc.* **2012**, *134*, 5742.

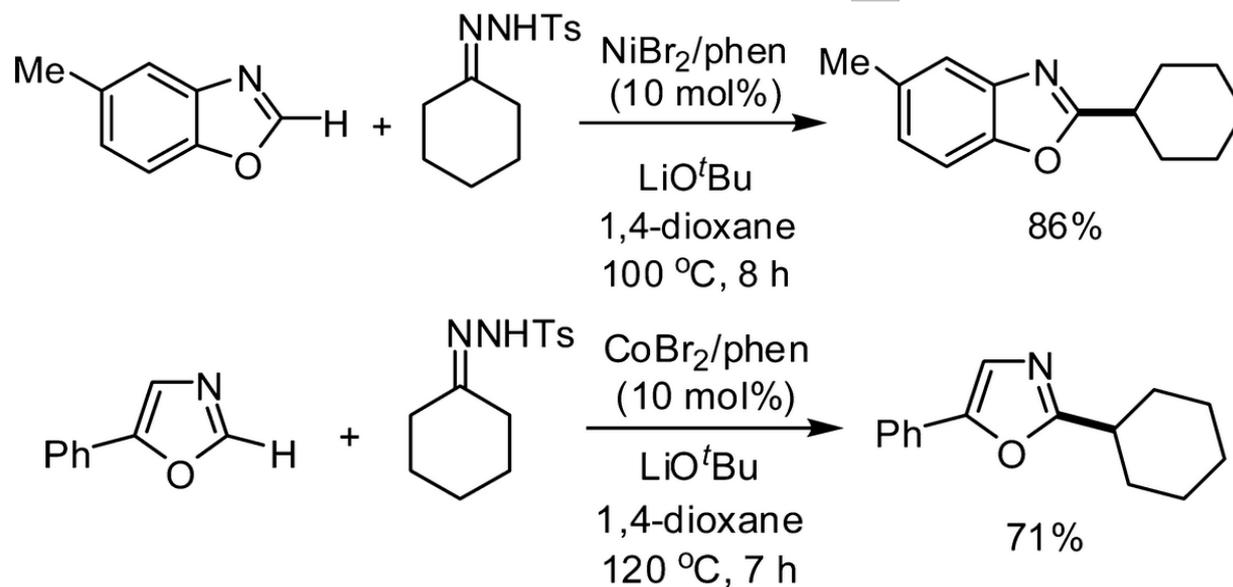


Rh catalyzed cross coupling reaction



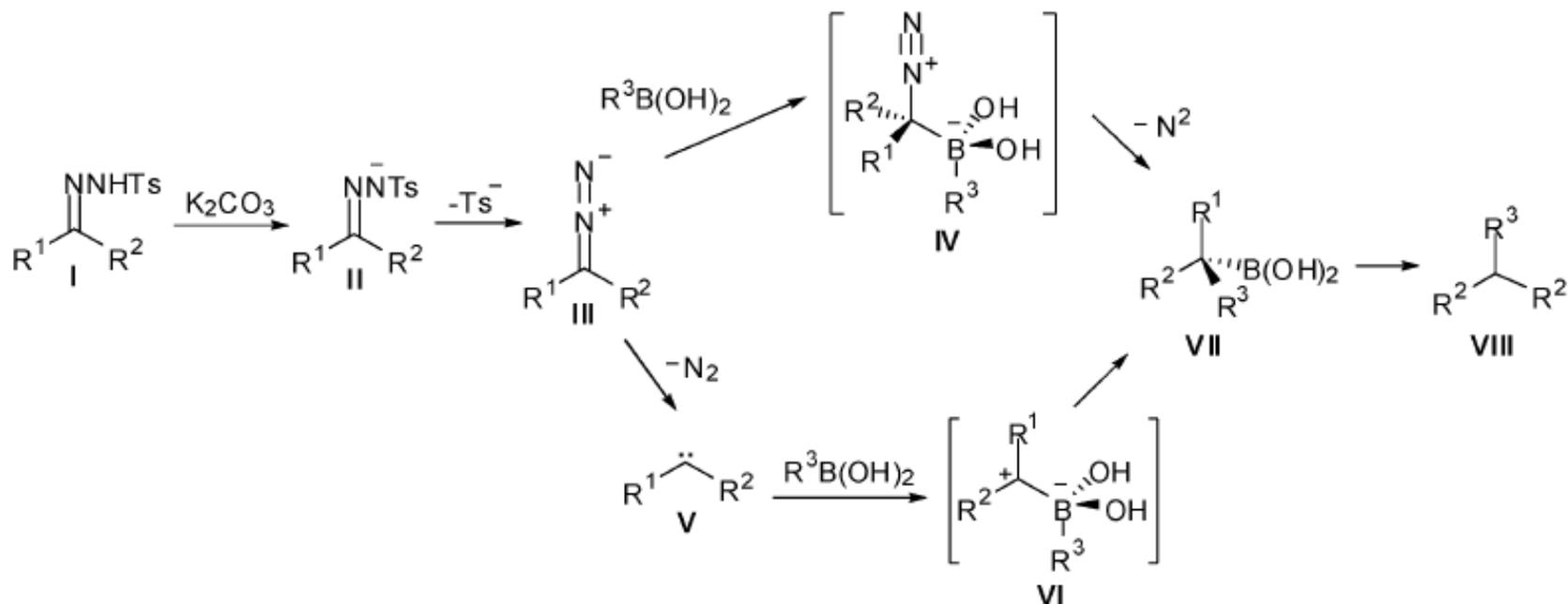
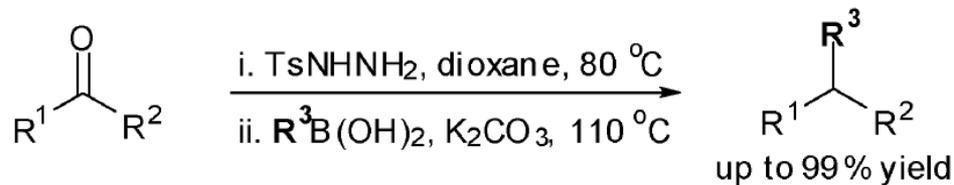
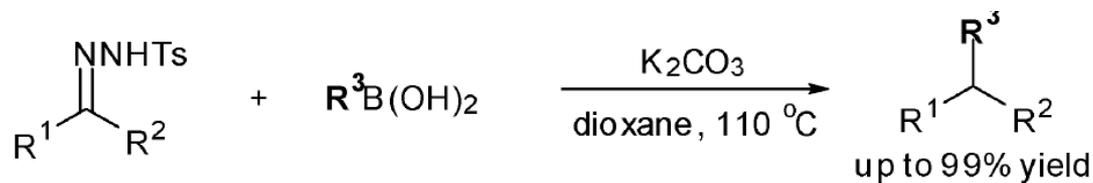
W.-Y. Yu, *et al. Org. Lett.* **2011**, *13*, 5370.

Ni and Co catalyzed cross coupling reaction



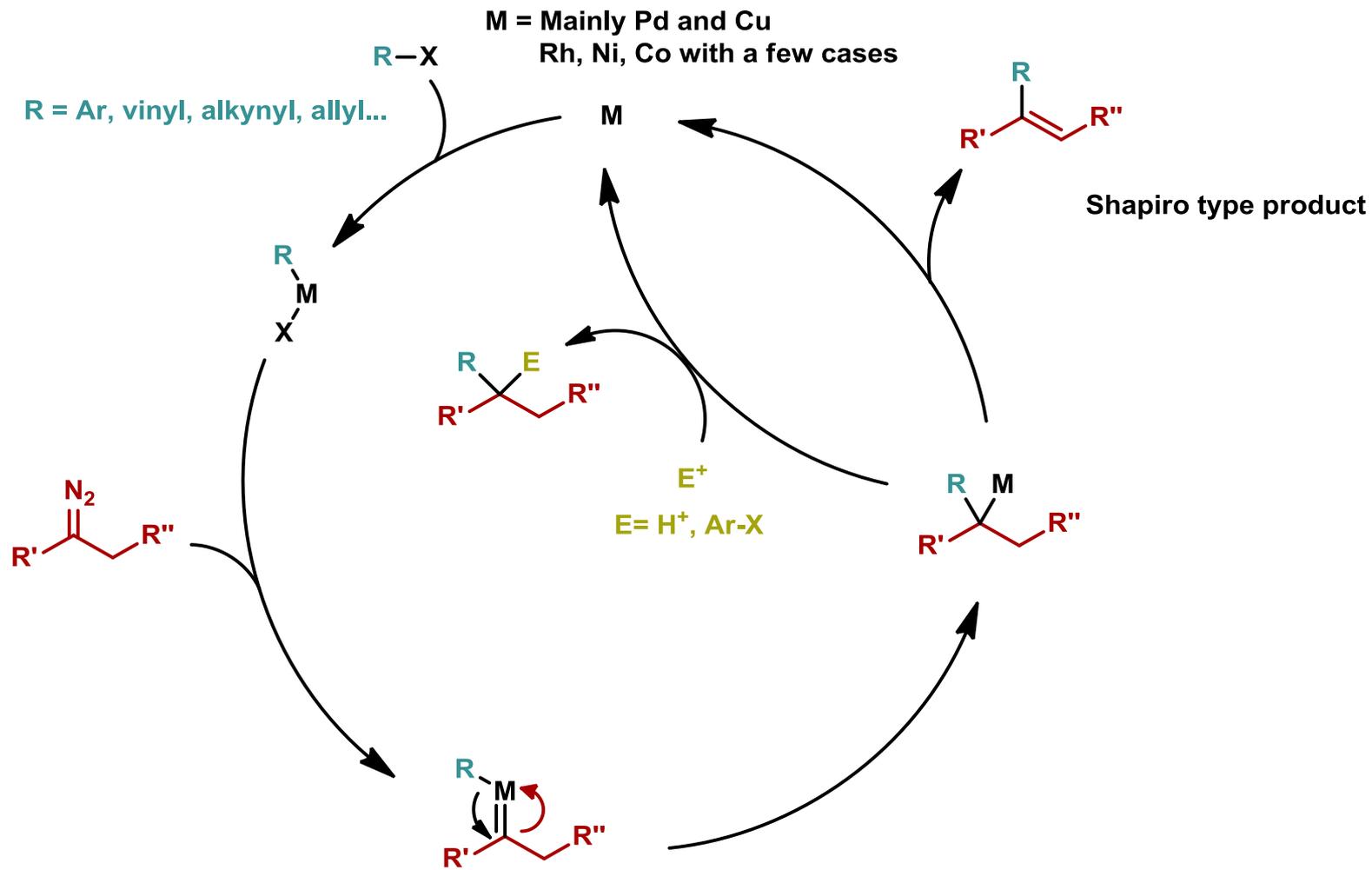
M. Mirua, *et al.* *Angew. Chem., Int. Ed.* **2012**, *51*, 775.

Mental free cross coupling reaction



J. Barluenga, C. Valdes, *et al. Nat. Chem.* **2009**, *1*, 494.

Summary



**Thanks for Your
Attention!**