

## Research Colloquium

### Group 9 Metal Catalysed Functionalization of C-H Bonds with Strained Three-membered Rings

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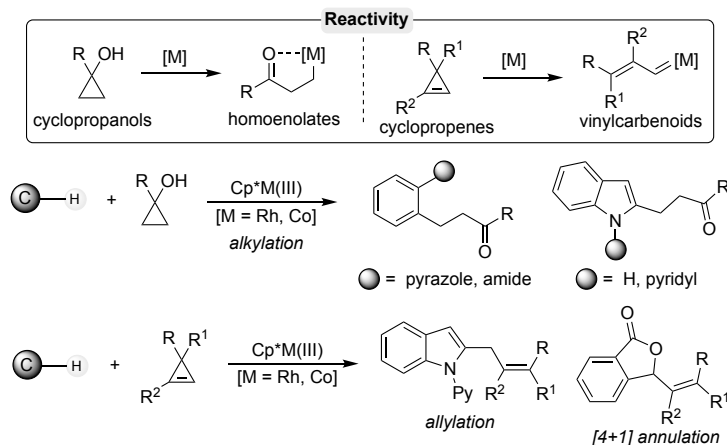
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Date: 19.05.2021

Time: 3.30 pm

#### Abstract:

Transition metal-catalyzed C-C bond formation through C-H bond activation has emerged as versatile method in modern organic synthesis.<sup>1</sup> In this context, allylation/ alkylation *via* C-H bond activation have been extensively studied with coupling partners such as allyl and unsaturated carbonyl derivatives.<sup>2</sup> On the other hand, strained ring systems such as cyclopropane/cyclopropene derivatives, have found diverse synthetic application due to its ring strain. But their use in the C-H bond functionalization is rather limited.<sup>3</sup> With due interest in the C-H bond functionalization employing Cp\*Co(III)/Cp\*Rh(III) catalysts,<sup>4</sup> we envisioned the application of strained cyclopropanols and cyclopropenes, potential precursors of homoenolates and vinylcarbenoids, respectively, as suitable coupling partner in the C-H bond functionalization of (hetero)arenes. Interestingly, this strategy afforded an efficient and easy access to diversely substituted allylated/alkylated (hetero)arenes and annulated products. The above-mentioned strategies will be discussed in detail during the presentation.



#### References:

- [1] Umeda, N.; Hirano, K.; Suyatoh, T. *J. Org. Chem.* **2009**, *74*, 7094
- [2] Mishra, N. K.; Sharma, S.; Park, J.; Han, P. S.; Kim, S. *ACS Catal.* **2017**, *7*, 2821
- [3] a) Wang, Y.; Fordyce, E. A. F.; Chen, F. K.; Lam, H. W. *Angew. Chem., Int. Ed.* **2008**, *47*, 7350; b) Zhou, X.; Yu, S.; Kong, L.; Li, X. *ACS Catal.* **2016**, *6*, 647
- [4] Ramachandran, K.; Anbarasan, P. *Eur. J. Org. Chem.* **2017**, 3965

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