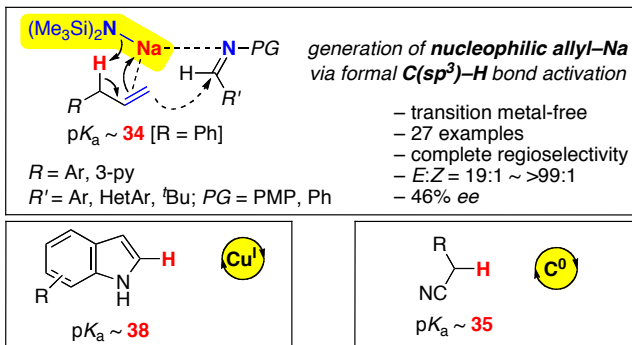


Challenging Catalytic C–H Bond Activation

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Our laboratory has focused on the invention of novel catalysts and/or reactions. In this context, we have reported the first catalytic use of elemental gallium in organic synthesis,¹ and allylic C(sp³)–H bond activation triggered by a sodium amide (Scheme–top).² In this lecture, we disclose as well the challenging C–H bond activation of unprotected indoles and alkyl nitriles by copper(I)³ and carbon(0)⁴ catalyst systems, respectively (Scheme–bottom).



References

- [1] Qin, B.; Schneider, U.* *J. Am. Chem. Soc.* **2016**, *138*, 13119–13122.
- [2] Bao, W.; Kossen, H.; Schneider, U.* *J. Am. Chem. Soc.* **2017**, *139*, 4362–4365.
- [3] Richards, J.; Schneider, U.* under review (*Nat. Chem.*).
- [4] Kossen, H.; Richards, J.; Bao, W.; Schneider, U.* under review (*J. Am. Chem. Soc.*).



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Uwe Schneider was born in Würzburg, Germany, and studied Chemistry in Germany and France. He received a PhD degree at IRCOF, France, with Professors Quirion and Pannecoucke [late 2003], before moving to the University of Tokyo, Japan, for postdoctoral research with Professor Kobayashi [early 2004]. He was an Assistant Professor at the University of Tokyo [2007–2011; tenure: 2009],¹ before taking up a Lecturer position at the University of Edinburgh, UK [late 2011]. His research interests are focused on the development of sustainable organic synthesis including: exploitation of main group metals and non-metals in their unusual low-oxidation/valence states for base, acid, dual, ambiphilic, FLP, and/or transition metal-like redox catalysis;² challenging C–H bond activation using metal–base and/or base catalysis;³ catalytic strong-bond activation in small molecules.

Selected Papers:

(1) Invited accounts: (a) Schneider, U.*; Huang, Y.-Y.; Chakrabarti, A.; Dao, H. T.; Morita, N.; Kobayashi, S.* *Pure Appl. Chem.* **2012**, *84*, 2417–2430; (b) Schneider, U.; Kobayashi, S.* *Acc. Chem. Res.* **2012**, *45*, 1331–1344.

(2) (a) Qin, B.; Schneider, U.* *J. Am. Chem. Soc.* **2016**, *138*, 13119–13122; (b) Qin, B.; Richards, J.; Derelli, D.; Schneider, U.* submitted.

(3) (a) Bao, W.; Kossen, H.; Schneider, U.* *J. Am. Chem. Soc.* **2017**, *139*, 4362–4365; (b) Richards, J.; Schneider, U.* under review (*Nat. Chem.*); (c) Kossen, H.; Richards, J.; Bao, W.; Schneider, U.* under review (*J. Am. Chem. Soc.*).