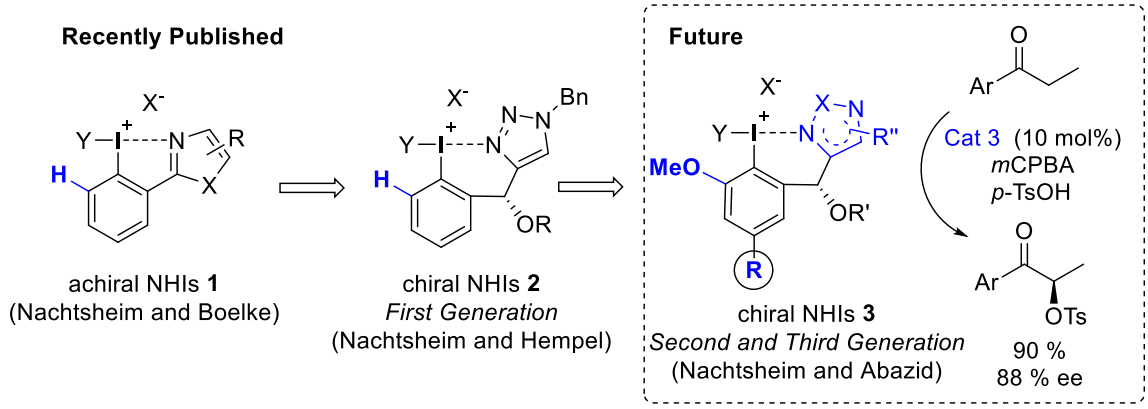
Abstract

Hypervalent iodine compounds, in particular aryl-λ^3-iodanes, have found wide spread applications in oxidative coupling reactions. Their reactivities are comparable to highly oxidized period 6 metals, in particular Hg(II), Tl(III) and Pb(IV), however without being as toxic. Nachtsheim and co-worker recently developed novel types of chiral and achiral N-heterocycle-stabilized iodanes (NHIs) **1** and **2** which outperform existing iodanes in terms of reactivity and selectivity (see Scheme). Those compounds are stable, and the introduction of *N*-heterocycles as stabilizing donor allows a highly modular fine tuning of the hypervalent iodine center. Based on these findings I want to introduce second generation chiral NHI-catalysts of type **3**. A special focus should be laid on the substituent ortho to the aryl iodide. This substitution pattern should lead to high distortion of the hypervalent iodine bond and thus have a direct influence on reactivity and selectivity of these novel chiral catalysts.



In preliminary result an *ortho*-OMe-substituted triazole derivative of **3** gave so far unseen reactivates and enantioselectivities in different reactions.[1] Synthetic variation of the *N*-heterocycle as well as DFT-studies should give an additional rational understanding towards the reactivity of these easy to synthesize, highly robust and reactive iodine-based catalysts.

1. References

(1) **Abazid, A. H.**; Nachtsheim, B. J. A Triazole-Substituted Aryl Iodide with Omnipotent Reactivity in Enantioselective Oxidations. *Angew. Chem.* **2019,** DOI: 10.1002/ange.201912023.