# Triazolylidene iron(II) piano-stool complexes: synthesis and catalytic hydrosilylation of carbonyl compounds

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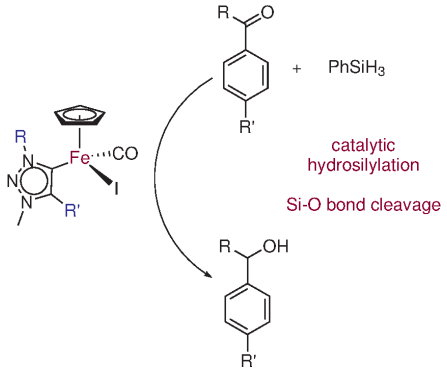
1,2,3-Triazolylidenes are a recently developed sub-class of NHC ligands which have tremendous versatility due to the synthetic flexibility of the copper catalysed cycloaddition of alkynes with azides (CuAAC).[1,2] These ligands are strong σ-donors, exhibiting stronger donor properties than classic Arduengo-type imidazole-2-ylidenes.[2] This property, coupled with the electronic flexibility of the mesoionic ligands makes them a powerful class of ligands for a large variety of catalytic transformations.

Iron is inexpensive, earth-abundant, non-toxic, biologically relevant, and environmentally benign. Thus, iron catalysts offer an attractive alternative to the systems based on rare and precious platinum group and coinage metals which dominate current literature.[3] Herein we present a new class of triazolylidene iron(II) piano stool complexes and their activity in catalytic hydrosilylation reactions.




[1] P. Mathew, A. Neels, M. Albrecht, *J. Am. Chem. Soc.*, **2008**, *130*, 13534-13535.
[2] K. F. Donnelly, A. Petronilho, M. Albrecht, *Chem. Commun.*, **2013**, *49*, 1145-1159.
[3] K. Riener; S. Haslinger, A. Raba, M. P. Högerl, M. Cokoja, W. A. Herrmann, F. E. Kühn, *Chem. Rev.*, **2014**, *114*, 5215-5272.