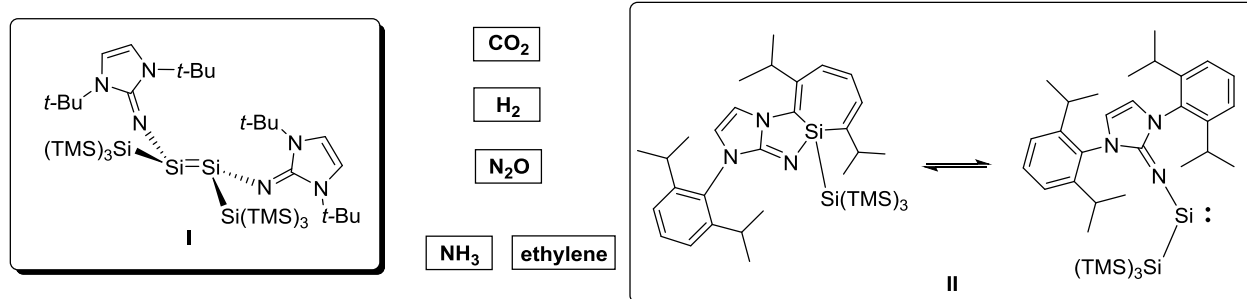


## An *N*-Heterocyclic Imino-substituted Disilene and Acyclic Silylene for the Activation of Small Molecules

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The past few years have witnessed a milestone in low valent silicon chemistry - the isolation of the first room temperature stable, two-coordinate acyclic silylenes.<sup>[1]</sup> These compounds are potential metal-free catalysts and some have been reported to cleave dihydrogen at ambient temperatures, others show remarkable behaviour towards ethylene.<sup>[2]</sup> By implementing NHIs as ligands at the sub-valent silicon centre,<sup>[3]</sup> recently two new structures were made accessible by our groups: Using *tert*-butyl substituents at the NHI, disilene **I** with a highly twisted and elongated Si=Si bond was isolated. With larger diisopropylphenyl groups, however, a completely different reactivity pattern was observed: the transient silylene performs a reversible intramolecular insertion into the adjacent aromatic ring to form silepin **II**.<sup>[4]</sup> In this talk, both compounds will be discussed in detail and their reactivity towards small molecules such as H<sub>2</sub>, ethylene, CO<sub>2</sub> or NH<sub>3</sub> will be presented.



**Figure 1.** Disilene (left) and silepin (right) with the respective substrates.

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- [2] a) F. Lips et al., *J. Am. Chem. Soc.* **2014**, *136*, 634–637; b) D. Wendel et al., *Organometallics* **2016**, *35*, 1–4.
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