**Phosphorus in Low Coordination: Recent Developments in the Chemistry of Phosphabenzenes**

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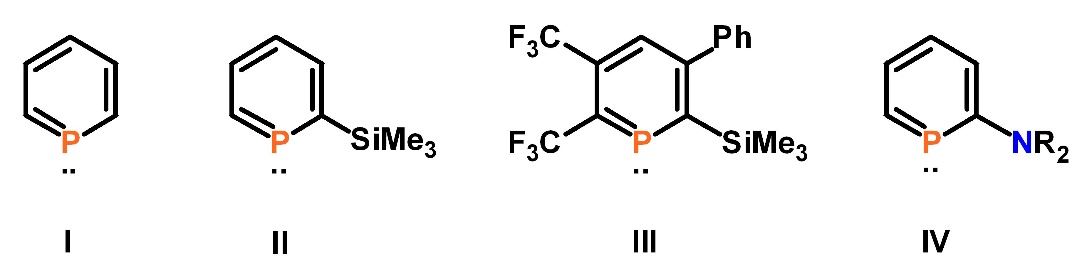
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Low-coordinate phosphorus(III) compounds have recently re-gained noticeable interest as the very peculiar stereoelectronic and coordination properties of such λ3σ2-species differ significantly from classical trivalent λ3σ3-phosphanes. These special characteristics can lead to interesting effects in more applied research fields, such as homogeneous catalysis and material science.

We recently found a facile synthetic access to the Si(CH3)3-substituted phosphabenzene (phosphinine) **II**, from which the parent compound C5H5P (**I**) can be prepared by means of a protodesilylation reaction (Figure 1).[1] We noticed that the Si(CH3)3-group in β-position of the phosphorus atom has a significant influence on the electronic properties of **II**, which results in a distinct reactivity of this heterocycle towards certain main group elements and main group compounds.

This lecture will focus on the design and preparation of novel, functionalized phosphinines (Figure 1), the higher homologs of pyridines. Special emphasis will be paid to the modification of their electronic properties, their coordination chemistry and reactivity.[2-5]



**Figure 1.** Parent phosphinine **I** and selected examples of functionalized phosphinines **II**-**IV**.

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[3] S. Giese, D. Buzsáki, L. Nyulászi, C. Müller, *Chem. Commun*. **2019**, *55*, 13812.

[4] J. Leitl, M. Marquardt, P. Coburger, D. J. Scott, V. Streitferdt, R. M. Gschwind, C. Müller, R. Wolf, *Angew. Chem. Int. Ed.* **2019**, *58*, 15407

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