

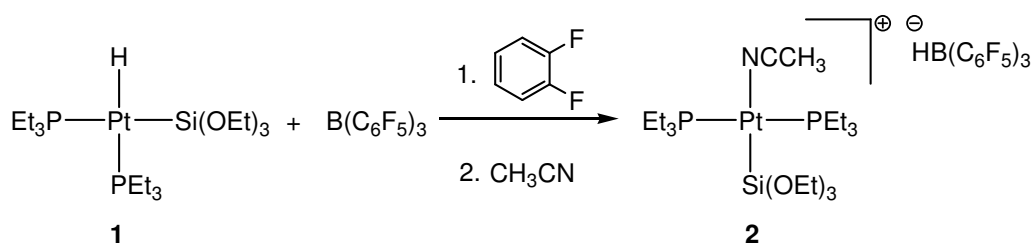
# Synthesis and Characterization of Cationic Platinum(II)-Silyl Complexes

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Platinum Silyl Complexes are known to be active catalysts in various transformations such as hydrosilylation<sup>[1]</sup> or C-H activation<sup>[2]</sup>. Here we present studies on the synthesis of novel cationic Platinum-Silyl complexes. The starting complex *cis*-[Pt(H)(SiR<sub>3</sub>)(PEt<sub>3</sub>)<sub>2</sub>] (R = OEt<sub>3</sub> **1**) can be synthesized via reaction of Pt(PEt<sub>3</sub>)<sub>3</sub> and HSi(R)<sub>3</sub> in toluene at room temperature.

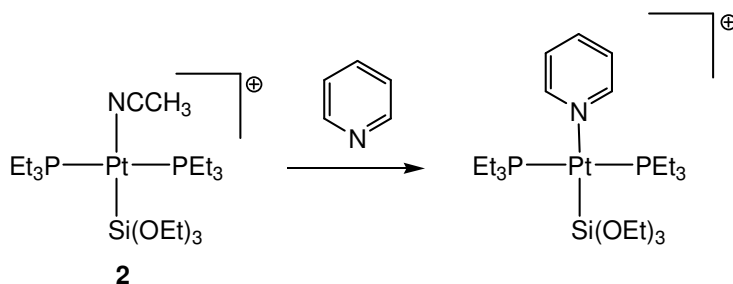
The treatment of the Hydrido-Silyl-Complex (**1**) with tris(pentafluorophenyl)borane or tritylium hexafluorophosphate gives a cationic platinum complex (**2**) (Scheme 1). This compound could be isolated and characterised by NMR, IR, MS and conductivity studies.



**Scheme 1.** Synthesis of *trans*-[Pt(NCMe)(SiOEt<sub>3</sub>)(PEt<sub>3</sub>)<sub>2</sub>]<sup>+</sup>.

In further studies Tilley *et al.* observed a cationic silyl complex by NMR but they were not able to isolate it<sup>[3]</sup>.

The cation (**2**) reacts with different donor molecules such as CO or pyridine to produce *trans*-[Pt(L)(SiOEt<sub>3</sub>)(PEt<sub>3</sub>)<sub>2</sub>]<sup>+</sup> (L = pyridine, CO) (Scheme 2).



**Scheme 2.** Substitution of Acetonitrile by Pyridine.

## Reference

[1] Corey, J. Y. ; Braddock-Wilking, J.; *Chem. Rev.* **1999**, *99*, 175-292.

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[3] Mitchell, G. T., Tilley, T. D., *J. Am. Chem. Soc.*, **1998**, *120*, 7635-7636.