



Ruthenium σ -complexes for chemoselective mono-hydrosilylation of nitriles

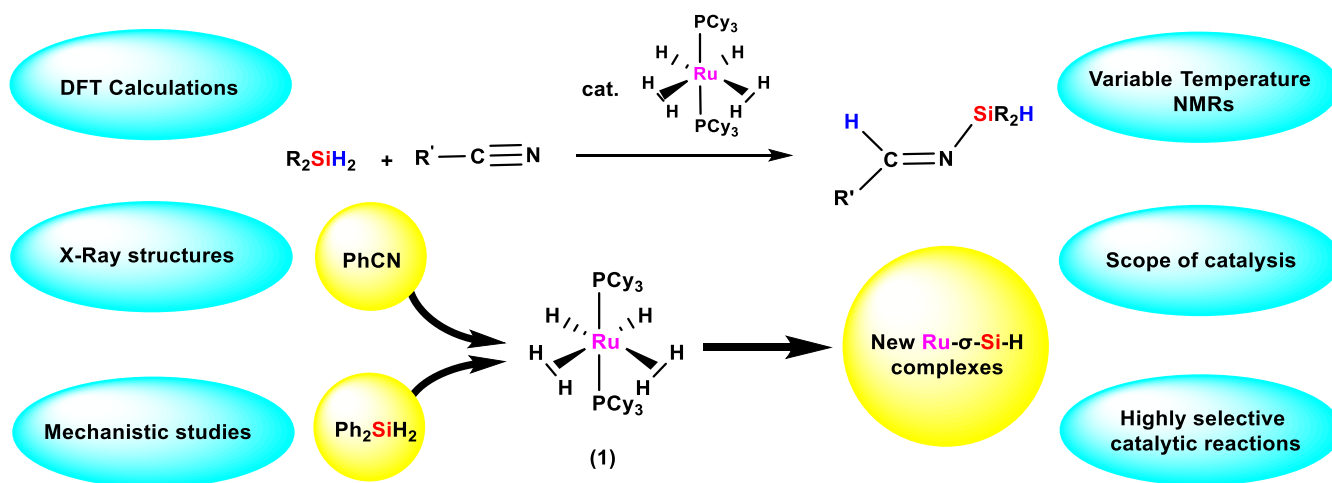
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The hydrosilylation of nitriles is an important route to reducing C–N triple bond in an efficient fashion.^[1] Hence the catalytic hydrosilylation of nitriles is an interesting target catalytic reaction. One of the major challenges in this catalytic reaction is synthesizing the monohydrosilylated compounds selectively because of the instability of the monohydrosilylated iminosilane compounds.^[2]

Ruthenium σ -Si-H complexes are well described in the literature^[3–5], and these highly reactive species are important in catalysis. The ruthenium bis dihydrogen complex **1** is a good candidate for the hydrosilylation of nitriles as it is a well-established reagent for the activation of the Si–H bonds. It is known that this complex reacts with silanes to form several ruthenium σ -Si-H complexes.^[6] In this presentation, we will present the catalytic activity of complex **1** for the hydrosilylation of nitriles. Some key compounds formed during the process have been isolated and fully characterized. A detailed mechanism will be proposed supported by experimental study and DFT calculations.



References

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