

## Seminar

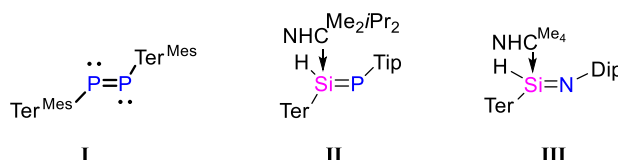
### Syntheses and Reactivities of P-P, P-Si, and Si-N Double Bonded Compounds

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Reversible binding/coordination is well known in certain transition metal complexes, such as the Wilkinson's catalyst, making them very useful in catalytic processes. In recent years the possibility of reversible binding/coordination in main group chemistry has been studied, a feature that allows such compounds to mimic the transition metal complexes. Developments of this field will allow chemists to make sustainable catalysts, using compounds of p-block elements, instead of transition metal complexes.

In this talk, I will discuss our findings on reversible coordination of different N-heterocyclic carbene (NHC) to a diphosphene, **I** and subsequent reactivity enhancement towards hydrolysis and hydrogenation reactions including the demonstration of catalytic hydrolysis as well. Moreover, we have found that those NHCs which are not able to coordinate with diphosphene even at low temperature, are able to induce hydrolysis reactions stoichiometrically as well as catalytically. Apart from these studies we also considered the convenient and direct route for the syntheses of partially H-substituted heteroatomic double bonded compounds phosphasilene, **II** and an iminosilene, **III**. Recently we use this carbene stabilized diphosphene as a ligand to synthesize terminal gold hydride.



Scheme 1: Chemical structures of I, II, and III.

**Wednesday, Feb 20<sup>th</sup> 2019**

**4:00 PM (Tea/Coffee at 3:30 PM)**

**Auditorium, TIFR-H**