

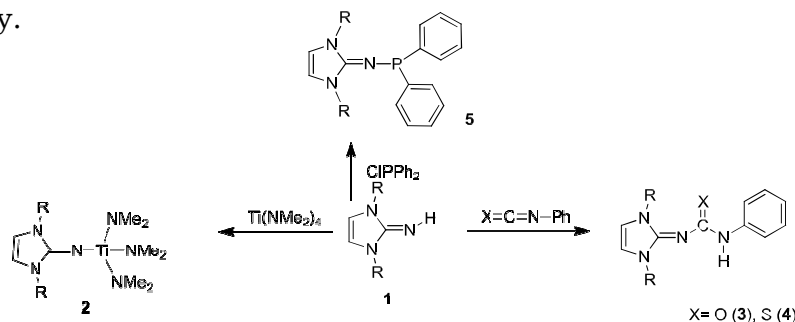
## Seminar

### Diversity of Imidazolin-2-imine Ligands in Group 2 and 4 Metal Chemistry

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N-heterocyclic carbenes of the imidazolin-2-ylidene type are nowadays everywhere and essential to the development of diverse research areas such as homogeneous catalysis, materials science and medicinal chemistry. The ability of NHC based imidazolin-2-iminato ligands to efficiently act as imido- type  $2\sigma$ ,  $4\pi$ -electron donors allow establishing imidazolin-2-iminato ligands as novel valuable members of the growing family of ancillary ligands in organometallic chemistry. Either imidazolin-2-imines (ImNH) or its various derivatives have proved its potency in rare earth half metallocene early transition metal chemistry. To explore the versatility of the (ImNH) ligand, we have successfully synthesized the imidazolin-2-iminophosphines and its O,S and Se derivatives to introduce into organometallic chemistry (Scheme 1). We also developed urea and thio-urea derivative of ImNH to introduce into the alkaline earth metal chemistry.



R = tBu, 2,4,6-C<sub>6</sub>H<sub>2</sub>, 2,6-IPr<sub>2</sub>C<sub>6</sub>H<sub>3</sub>      Scheme 1

Reaction of compound 1 (ImNH) with titanium tetra-amide to give complex imidazolin-2-imido substituted titanium complex 2, which on further treated with various reagents like carbodiimide, amines and substituted phenols. Full accounts of synthesis, reactivity and structural aspects of imidazolin-2-imine-hybrid ligands and its titanium complexes will be presented.

**Thursday, Nov 13th 2014**

**11:30 AM (Tea/Coffee at 11:15 AM)**

**Seminar Hall, TCIS**