

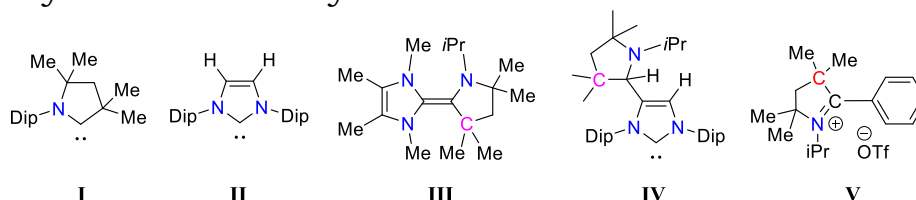
Internal Seminar

Syntheses and Reactivity studies of N-Alkyl CAAC based Electron-Rich Olefins, Backbone Functionalized NHCs, and Carbon Based Radicals

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In modern synthetic chemistry, N-heterocyclic carbenes (NHCs), **I** and Cyclic(alkyl)(amino)carbenes (CAACs), **II** are extensively used as coordinating ligands for transition metals, f-block elements, coinage metals. Also NHC and CAACs are utilized for stabilization of highly reactive low valent low oxidation states of various main group elements. However, in NHC chemistry, the striking effects of N-aryl Vs N-alkyl substituents on their reactivity are known but in case CAAC, so far development of CAAC chemistry only limited to N-aryl substituents.



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

In first part of my talk, I will briefly discuss about our findings on i) the use of N-alkyl substituted 1-pyrrolinium salts as a synthons for the syntheses of per N-alkyl substituted NHC-CAAC based electron-rich olefins, **III**, ii) role of N-substituents on 1-pyrrolinium cation in generation of triazaolefin iii) abnormal addition of N-aryl substituted NHC to 1-pyrrolinium cations and subsequent synthesis of backbone functionalized NHCs, **IV**, and iv) direct access of C-2 substituted N-alkyl 1-Pyrrolinium cations, **V** to generate N-alkyl CAAC stabilized carbon based radicals. In second part of this talk, I will discuss about the future aspect of this work.

Thursday, Nov 15th 2018

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

Seminar Hall, TIFR-H