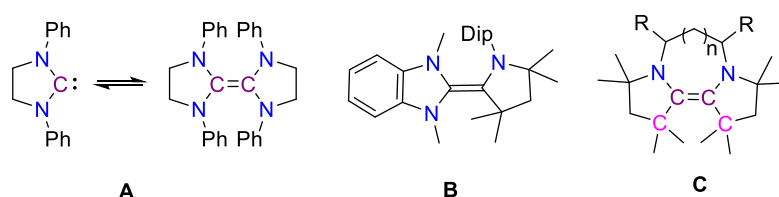


Students' Annual Seminar

CAAC-CAAC Dimer

Mithilesh Kumar Nayak

Dimerization of N-heterocyclic carbenes (NHCs), *A*, was first postulated by Wanzlick in 1960.^[1] According to him, tetraaminoethenes dissociates reversibly to produce diaminocarbenes. After this report a series of diaminocarbenes have been studied.^[2] Experimental evidences suggest that most of the dimerization took place in the presence of proton source. Advantage of NHCs dimerization is the formation of electron rich alkenes which have been used as organic electron donors for various organic transformations.^[3] Also there has been a report for the synthesis of NHC and cyclic(alkyl)(amino)carbenes (CAACs) based NHC-CAAC dimer, *B*.^[4] Here we would like to disclose the synthesis of N,N'-bridged CAAC-CAAC dimers, *C*, which shows sequential 2-e oxidation and we have seen the striking influence of spacer which connected the two CAAC motif.



References:

1. Wanzlick, H.W.; Schikora, E. *Angew. Chem.* 1960, 72, 494.
2. Alder, R. W.; Blake, M. E.; Chaker, L.; Harvey, J. N.; Paolini, F.; Schütz, J. *Angew. Chem. Int. Ed.* 2004, 43, 5896–5911.
3. Doni, E.; Murphy, J. A. *Chem. Commun.* 2014, 50, 6073–6087.
4. Munz, D.; Chu, J.; Melaimi, M.; Bertrand, G. *Angew. Chem. Int. Ed.* 2016, 55, 12886–12890.

Friday, Feb 28th 2020

9:30 AM (Tea/Coffee at 9:15 AM)

Seminar Hall, TIFR-H