

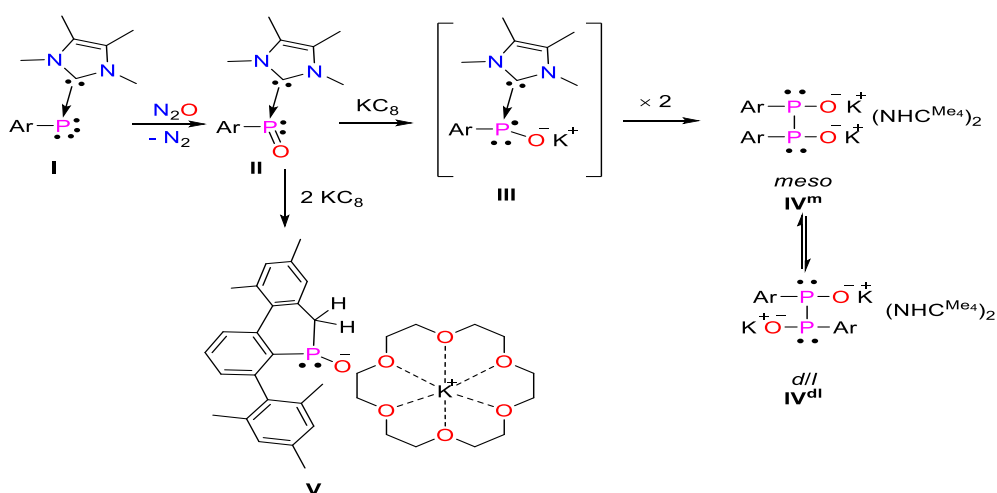
Internal Webinar

Synthesis and Reduction of an NHC-Stabilized Phosphinidene Oxide

Ramapada Dolai

TIFR-Hyderabad

Unlike the rich chemistry of nitrosobenzene,^[1] the chemistry of the heavier *P*-analogue phosphinidene oxide is not known so much. It has been mostly studied under matrix condition.^[2,3] Here we will present our recent findings for the isolation of an *N*-heterocyclic carbene (NHC)-stabilized phosphinidene oxide from the controlled oxygenation of the corresponding phosphinidene.^[4] The one-electron reduction of the NHC-stabilized phosphinidene oxide mimics the pinacol coupling reaction. On the other hand, two-electron reduction leads to the formation of the C-H activated product at the P-centre.



References:

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- [2] A. Mardyukov, F. Keul, P. R. Schreiner, *Angew. Chem.Int. Ed.* **2020**, *59*, 12445–12449.
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- [4] D. Dhara, P. Kalita, S. Mondal, R. S. Narayanan, K. R. Mote, V. Huch, M. Zimmer, C. B. Yildiz, D. Scheschkewitz, V. Chandrasekhar, A. Jana, *Chem. Sci.* **2018**, *9*, 4235–4243.

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