

## **Students' Annual Seminar**

### **Functionalisation of NHC/CAAC-Based Carbodicarbene and Twisted Push-Pull Alkenes**

**Vasu Malhotra**

Zerovalent or monoatomic carbon, with marked significance in synthetic chemistry,<sup>[1]</sup> however requires special precursors for its preparation owing to its extreme reactivity.<sup>[2]</sup> Therefore, suitable synthetic equivalents are used for monoatomic carbon, typically carbenes, consisting of a central di-coordinated carbon atom retaining four valence electrons as two lone pairs.<sup>[3]</sup> Herein, we employ the NHC/CAAC-based carbodicarbene<sup>[4]</sup> as atomic carbon equivalent for various functionalisations. Further, we have utilised the strong electron-donor ability of twisted push-pull alkenes<sup>[5]</sup> with sterically bulky and electronically different substituents to successfully functionalise them.

#### **References**

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2. Kamitani, M.; Nakayasu, B.; Fujimoto, H.; Yasui, K.; Kodama, T.; Tobisu, M. *Science* 2023, 379, 484–488.
3. Dyker, C. A.; Lavallo, V.; Donnadieu, B.; Bertrand, G. *Angew. Chem. Int. Ed.* 2008, 47, 3206–3209.
4. Dolai, R.; Kumar, R.; Elvers, B. J.; Pal, P. K.; Joseph, B.; Sikari, R.; Nayak, M. K.; Maiti, A.; Singh, T.; Chrysochos, N.; Jayaraman, A.; Krummenacher, I.; Mondal, J.; Priyakumar, U. D.; Braunschweig, H.; Yildiz, C. B.; Schulzke, C.; Jana, A. *Chem. Eur. J.* 2023, 29, e202202888.
5. Chrysochos, N.; Pättsch, S.; Elvers, B. J.; Krummenacher, I.; Nandeshwar, M.; Prabhusankar, G.; Braunschweig, H.; Schulzke, C.; Ravat, P.; Jana, A. *Chem. Commun.* 2023, 59, 12350–12353.

**Thursday, Apr 18<sup>th</sup> 2024**

**14:00 Hrs (Tea / Coffee 13:45 Hrs)**

**CR-4, TIFR-H**