Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Reactivity Control of Alkyl Boronic Esters via Amino Radical Transfer (ART)

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Metal-catalysed cross-couplings of aryl boron reagents, exemplified by the Suzuki–Miyaura[1] and Chan–Lam[2] reactions, are indispensable in organic synthesis. In contrast, analogous couplings with alkyl boronic pinacol esters (Bpins)[3,4,5] are hindered by β-hydride elimination, isomerisation, and protodeborylation. In this talk, I will present the amino radical transfer (ART) strategy, which converts alkyl Bpins into alkyl radicals, enabling metal-catalysed couplings with amines[6] and alkenes to access medicinally relevant scaffolds.

References:

[1] Miyaura, N.; Suzuki, A. Chem. Rev. 1995, 95, 2457–2483.
[2] West, M. J.; Fyfe, J. W. B.; Vantourout, J. C.; Watson, A. J. B. Chem. Rev. 2019, 119, 12491−12523.
[3] Bera, S.; Hu, X. Angew. Chem. Int. Ed. 2019, 58, 13854–13859.
[4] Bera, S.; Mao, R.; Hu, X. Nat. Chem. 2021, 13, 270–277.
[5] Bera, S. Fan, C., Hu, X. Nat. Catal. 2022, 05, 1180–1187.
[6] S. Shil, S.; Patra, B. P.; Begam, T.; Bera, S. J. Am. Chem. Soc. 2025, 147, 26486–26495.

Wednesday, Jan 21st 2026

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Seminar Hall, TIFRH