

Internal Seminar

Direct ortho-C—H Aminoalkylation of 2-Substituted Pyridine Derivatives by Yttrium Complexes with N,N'-Diarylethylenediamido Ligands

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Direct functionalization of the C—H bond of pyridine has attracted recent interest in terms of atom economical and cost effective synthetic protocols. Recently, we reported the first catalytic ortho-C—H bond addition of pyridine derivatives to a polar C=N bond of imines using $\text{Ln}[\text{N}(\text{SiMe}_3)_2]_3$ as an effective catalyst.¹ As our continuous interest, we prepared and characterized single site yttrium alkyl complex 1 by reacting $\text{Y}(\text{CH}_2\text{SiMe}_3)_3(\text{THF})_2$ with N,N'-diarylethylenediamine ligand and employed the complex 1 for the aminoalkylation reaction. We isolated reaction intermediates by treating 1 with 2-ethylpyridine and N-(tert-butyl)-2-methylpropane-1-imine. Furthermore, based on kinetic studies we proposed a reaction mechanism.

Reference:

1. Nagae, H.; Shibata, Y.; Tsurugi, H.; Mashima, K. *J. Am. Chem. Soc.* 2015, 137, 640.

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01:30 PM (Tea/Coffee at 01:00 PM)

Seminar Hall, TIFR-H