



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Thesis Title: Transition-Metal-Catalyzed Auxiliary Assisted Site-Selective C-H Functionalization: Access to Functionalized *N*-Heterocycles

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SHORT ABSTRACT

The thesis is comprised of four chapters. The first chapter describes a general introduction of the auxiliary assisted regioselective C-H functionalization of *N*-heterocycles under transition-metal (TM) catalysis. The second chapter demonstrates a Pd-catalyzed C4-H arylation of indoles utilizing simple arenes *via* 2-fold C-H activation/C-C coupling. The third chapter deals with merging C-H/C-C activation for the C4-H allylation of indoles with vinylcyclopropanes under redox-neutral Ru-catalysis. The fourth chapter illustrates a cascade C-H functionalization/2-fold annulation of 2-aryloxazolines with 1,2,3-triazoles to afford heteroaryl-tethered oxazoloisoquinolinones under Rh-catalysis.