INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Programme of Study	:	Ph.D.

Thesis Title: Transition-Metal-Catalyzed C−C and C−Heteroatom Bonds Formation: Stereoselective Access to Functionalized Heterocycles

Name of Thesis Supervisor(s)	:	Prof. T Punniyamurthy
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SHORT ABSTRACT

The thesis is divided into four chapters. The first chapter describes a general introduction on the synthesis of heterocycles utilizing transition-metal (TM) catalyzed ring opening cyclization of strained three-membered rings and cascade C-H functionalization/annulation strategy. The second chapter illustrates on a highly stereospecific synthesis of tetrahydro-[1,3,4]-oxadiazines via a Co-catalyzed C-N and C-O bonds formations of oxiranes with diaziridines. The third chapter focuses on a regiodivergent Cu-catalyzed cross-dimerization of oxaziridines with aziridines to synthesize functionally diverse [1,2,4]/[1,2,5]-oxadiazines. The fourth chapter deals with a Rh-catalyzed cascade C-H functionalization/annulation of benzamides with maleimides to furnish succinimide tethered isoquinoline-1,3-diones.