



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Thesis Title: Transition-Metal-Catalyzed Weak Chelating *N*-Oxide Directed C-H Functionalization of Quinolines
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The thesis is organized into four chapters. The initial chapter delineates a detailed analysis on C-H functionalization for the modification of quinoline under transition-metal-catalysis. The second chapter deals with C8-allylation of quinoline *N*-oxides (QNOs) using vinylcyclopropanes (VCPs) as allyl source under Rh-catalysis. The third chapter demonstrates a Co(III)-catalyzed site-selective C8-alkylation of quinolines *N*-oxides using cyclopropanols (Cyp) as the alkylating agent via C-H/C-C bond activation. The fourth chapter focuses on Pd(II)-catalyzed relay C-H activation of 8-methylquinoline *N*-oxides with maleimides resulted dual C(sp³)-H/C7(sp²)-H activation and annulation.