



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Programme of Study : **Ph.D.**

Thesis Title: **Stereospecific Opening and Cyclization of the Strained Ring Systems for the Synthesis of Six-Membered Heterocycles**

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SHORT ABSTRACT

The thesis is divided into four chapters. The first chapter describes the general introduction to the opening and cyclization of the strained ring system for the synthesis of six-membered heterocycles. The second chapter focuses on the synthesis of piperazines and tetrahydropyrazines through stereospecific ring-opening and cycloisomerization of aziridines with *N*-propargylamines. Third chapter covers stereospecific synthesis of substituted 1,4-oxazine via Zn/Ag Relay catalyzed ring opening/hydroalkoxylation of oxiranes with *N*-propargylamines. Chapter four deals with the stereospecific assembly of tetrahydroquinolines via tandem ring-opening/oxidative cyclization of donor-acceptor cyclopropanes with *N*-alkyl anilines.