



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Thesis Title: Lewis and Brønsted Acid Mediated Synthesis of Nitrogen and Oxygen Heterocycles

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SHORT ABSTRACT

The contents of this thesis have been divided into five chapters based on the results of experimental work performed during the complete course of the research period. The chapter 1 of the thesis presents introduction to nitrogen and oxygen containing heterocyclic compounds, their biological significance and literature methods for their synthesis. Chapter 2 gives a description about Lewis acid mediated intramolecular C-C bond formation of alkyne-epoxide leading to six-membered nitrogen and oxygen heterocycles. Chapter 3 illustrates Lewis acid mediated intramolecular C-O bond formation of alkanol-epoxide leading to substituted morpholine and 1,4-oxazepane and its application towards the total synthesis of (\pm)-viloxazine. In chapter 4, synthesis of dihydroindeno[1,2-c]isochromene via cascade cyclization and FriedelCrafts reaction has been described. Chapter 5 presents Brønsted acid mediated synthesis of 4trifluoromethanesulfonate substituted 3,6-dihydropyrans and their application in various C-C coupling reactions.