



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI  
SHORT ABSTRACT OF THESIS

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Programme of Study : Ph.D.

Thesis Title: New Approaches Towards the Synthesis of Oxygen Heterocyclic Compounds

Name of Thesis Supervisor(s) : Prof. Anil Kumar Saikia

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**SHORT ABSTRACT**

The Ph.D thesis work entitled 'New Approaches Towards the Synthesis of Oxygen Heterocyclic Compounds' describes some original and interesting research work. The dissertation is organized into four chapters. The thesis work is designed for exploration of Synthesis of Isochroman Derivatives *via* Oxa-Pictet-Spengler Reaction of Acrylyl Enol Ethers: Formal Synthesis of (+)-Sonepiprazole (U-101387) and (+) U-54537. Stereoselective Synthesis of 4-O-Tosyltetrahydropyrans *via* Prins Cyclization reaction. Regioselective synthesis of substituted 3,6-dihydropyran from 3-butene-1-ol and aldehydes *via* Prins cyclization reaction mediated by TfOH (Triflic acid). All these compounds were characterized by spectroscopic techniques and HRMS. In addition, the structures of some of the synthesized compounds were confirmed through single crystal XRD. Out of these works incorporated in the thesis, one research works is already published in an international journals and another one work is under communication and the remaining one more work will be communicated soon for publication.