



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI  
SHORT ABSTRACT OF THESIS

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Programme of Study : Ph.D.

Thesis Title: Utility of Sterically Strained Brønsted Salts as Organocatalysts in Glycosylation Reactions

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Thesis Submitted to the Department : Chemistry

Date of completion of Thesis Viva-Voce Exam : 28-12-2022

Key words for description of Thesis Work : Brønsted salts, Carbohydrates, Glycosylation, Organocatalyst.

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**SHORT ABSTRACT**

The contents of the thesis titled as “Sterically Strained Brønsted Salts and Their Utility as Organocatalysts in Glycosylation Reactions” is divided into five chapters. The first chapter describes the literature review on sterically strained Brønsted Salts like protonated pyridine derivatives substituted with bulky groups. Their utility in various organic reactions as well as in glycosylation reactions was discussed. The second chapter deals with hydration on glycals by sterically hindered 2,4,6-tri-tert-butylpyridinium hydrochloride catalyst. The third chapter demonstrates the direct stereoselective synthesis of 2-Deoxy and 2,6-dideoxy- $\beta$ -thioglycosides from glycals. The fourth chapter reveals to us that 2,4,6-tri-tert-butylpyridinium (TTBPy) salts can catalyze the sulfonamidoglycosylation of 2-deoxy and 2,6-dideoxy Sugars. Chapter five focuses on the effect of various silyl-protecting groups on the stereoselectivity of rhamnosylation and stereoselective synthesis of TBDPS protected  $\alpha$  rhamnosides.