



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Programme of Study : Ph.D.

Thesis Title: "Regioselective Bromination of Substituted 2'-Hydroxy Chalcones and Synthesis of Fused Nitrogen Heterocycles"

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Thesis Submitted to the Department/ Center : Department of Chemistry

Date of completion of Thesis Viva-Voce Exam : 27.09.2016

Key words for description of Thesis Work : regioselective monobromination, 7-bromoaurone, 8-bromoflavone, tandem Knoevanegal-Michael reaction, 2*H*-indazolo[2,1-*b*]phthalazine-triones, chromeno[3,4-*b*]quinolin

SHORT ABSTRACT

The thesis describes a new synthetic protocol for regioselective monobromination of (*E*)-1-(2'-hydroxy-4',6'-dimethoxyphenyl)-3-aryl-2-propen-1-ones using BDMS. Further it also illustrates the synthesis of 7-bromoaurone and 8-bromoflavone derivatives from the brominated products by cyclization on treatment with 0.2 M ethanolic KOH solution. The protocol has several advantages such as non-hazardous, high efficiency, and selectivity.

In addition, the thesis also demonstrates the one pot synthesis of some fused nitrogen heterocycles via tandem Knoevanegal-Michael reaction which includes the synthesis of 2*H*-indazolo[2,1-*b*]phthalazine-triones using hydrated ferric sulfate as an efficient, inexpensive and reusable catalyst as well as for the synthesis of chromeno[3,4-*b*]quinolin-6,11-dione and benzo[*f*]chromeno[3,4-*b*]quinolin-6-one derivatives using 3-aminocoumarins as the key starting materials by employing TBATB as catalyst.