



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI  
SHORT ABSTRACT OF THESIS

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Programme of Study : Ph.D.

Thesis Title: Exploration of  $\beta$ -Oxodithioesters Toward Facile Access to Heterocycles & Synthesis of 2-Oxypyrrole and Fused Chromeno-pyrazolo-pyridine Involving MCRs Strategy.

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The content of the thesis entitled "Exploration of  $\beta$ -Oxodithioesters Toward Facile Access to Heterocycles & Synthesis of 2-Oxypyrrole and Fused Pyrazolo-pyridine Involving MCRs Strategy" has been divided into two parts as Part A and Part B. Part A of the thesis comprises four chapters such as Chapter 1, Chapter 2, Chapter 3 and Chapter 4. Likewise, Part B of the dissertation contains three chapters namely Chapter 1, Chapter 2 and Chapter 3. Chapter 1 of each part of the dissertation demonstrates a brief review of the work on the relevant topics and the other chapters of thesis elaborate successful results and discussion along with experimental section.

we have successfully achieved the synthesis of nitrogen containing heterocycles such as trisubstituted-1H-pyrazole-4-carbodithioates, tetrahydro-2H-pyrazolo[3,4-*b*]pyridines and 2-substituted benzo[*d*]thiazole derivatives starting from  $\beta$ -oxodithioester as an initial synthons, which are the new additions in the area of synthetic organic chemistry. We have developed cost effective methods for the synthesis of various dihydro-2-oxypyrroles and dihydrochromeno[4,3-*b*]pyrazolo[4,3-*e*]pyridin-6(7H)-one derivatives by involving multi-component reactions strategy. Moreover, we have also demonstrated the usefulness of  $\beta$ -oxodithioesters as well as multi-component reactions strategy for the synthesis of various nitrogen, oxygen and sulfur containing heterocycles.