

## ABSTRACT

The thesis has been divided into three chapters: · Chapter 1: Lewis acid catalyzed directly dehydrative carbon–carbon bond formation reaction of 2-benzofuryldiphenylmethanol with 1,3-dicarbonyls, is investigated. · Chapter 2: An unprecedented utilization of 1,3-acetonedicarboxylic acid as a 1,3- bis-pro-nucleophile with acyloxy-pyran-3-one for the synthesis of bicyclic compounds, is studied. · Chapter 3: The synthesis of starting material 2-((2E,4E)-5-phenylpenta-2,4- dienoyl)benzaldehyde and optimized condition for the IMBH adducts, is presented.