

PREFACE

The thesis is the compilation of the research work carried out by the author under the supervision of Professor Pranab Ghosh in the Department of Chemistry, University of North Bengal during the period 2015 to 2020. It comprises a number of transformative reactions on different carbocyclic compounds. And as the author had privilege to work in the natural products laboratory, the carbocyclic compounds chosen as the starting substrates. Because of the presence of large extent catenation capability of carbone, it can produced wide range of molecules solely made by them, it implies that nature provide wide number of carbocyclic compounds. Carbocyclic compounds are produce by joining of two or more carbocycles together in a number of different fashions. This carbocycles are most common in all kinds of natural products.

Thus Carbocycles are another class of fundamental molecular skeletons in various types of organic compounds, pharmaceuticals, natural products, agrichemicals, and bioactive molecules.

The thesis starts with **Chapter I**, where a brief review on the carbocyclic compounds and the transformative reactions of carbocyclic compounds transformation reactions is described. **Chapter II** deals with the A greener and sustainable approach towards the synthesis of propargylamine using multicomponent A^3 -coupling reaction. **Chapter III** represents Environmentally begin approach towards c-s cross coupling reaction by organo-copper(II) complex. **Chapter IV** describes Graphene Oxide catalysed one pot synthesis of pyrimido[4,5-*b*]quinolinone-2,4-diones and their biological evaluation. **Chapter V** describes One-pot three-component tandem annulation of 4-hydroxycumarine with aldehyde and aromatic amines using Graphene oxide as an efficient catalyst. And the last but not the least **Chapter VI** represents Transformative reaction on triterpenoids: Action of hydrogen peroxide in presence of selenium dioxide on the oxime derivative of taraxerone and antimicrobial activity of the isolated compounds.