
Preface

The fundamental goal of this thesis is to create novel synthetic methodologies for the synthesis of N-Containing heterocyclic Compounds.

The effective green synthesis of Nitrogen-containing heterocyclic compounds is embodied in the thesis titled "**Multicomponent Synthesis of N-Containing Heterocyclic Compounds**". **Chapter 1** provides a detailed explanation of multicomponent synthesis and its significance in organic synthesis, N-Containing heterocycles and its importance, and different methods for the synthesis of Nitrogen Containing Compounds.

Chapter 2 will describe the Eosin Y-Catalyzed Synthesis of 3-Aminoimidazo[1,2-*a*]Pyridines via the HAT Process under Visible Light through Formation of the C-N Bond. **Chapter 3** will disclose Visible-Light-Promoted Synthesis of Fused Imidazoheterocycle by Eosin Y under Metal-Free and Solvent-Free Conditions. **Chapter 4** will highlight a Green Synthesis of Pyrimido[4,5-*b*]Quinolines and Pyrido [2,3-*d*] Pyrimidines via mechanochemical approach. **Chapter 5** will present Transition metal-free Synthesis of Pyrido[2,3-*d*]pyrimidines via Csp³/Csp²-H functionalization using K₂S₂O₈ as Oxidant finally, **Chapter 6** will summarize and conclude the total thesis work.