

## Preface

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Nitrogen is a naturally occurring element that is essential for growth and development of both plants and animals. It is found in proteins, nucleic acids and in several other organic and inorganic compounds. A vast number of nitrogen containing heterocyclic compounds have found applications in pharmaceutical research, agriculture science and drug discovery. Nitrogen is a part of several functional groups such as amines, imines, amides, oximes etc. and biologically relevant heterocyclic compounds like pyrrole, pyridine, indole, benzimidazole, benzothiazole and benzoxazole. In this context, the thesis entitled “**New Avenues for the Synthesis of Some Biologically Relevant Nitrogen Containing Compounds**” will introduce various aspects of synthesis of nitrogen containing organic compounds.

**Chapter 1** will provide a general introduction and literature review of synthesis and applications of some main class of nitrogen containing organic compounds. **Chapter 2** will provide multi component synthesis of imidazopyrimidine derivatives in aqueous medium under ultrasound irradiation using starch functionalized magnetite nanoparticles as a green catalyst. **Chapter 3** will describe a facile and convenient synthetic approach for benzimidazole and benzothiazole by using UHP under solvent free conditions. **Chapter 4** will highlight the synthesis of pyrazole using UHP under grinding method. **Chapter 5** will describe a simple and efficient method for the primary and secondary amide synthesis by using KI/ lactic acid catalytic system at reflux temperature.