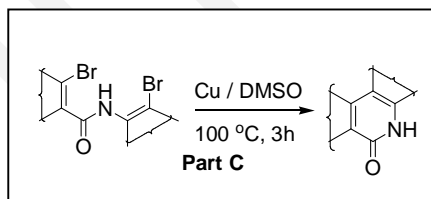
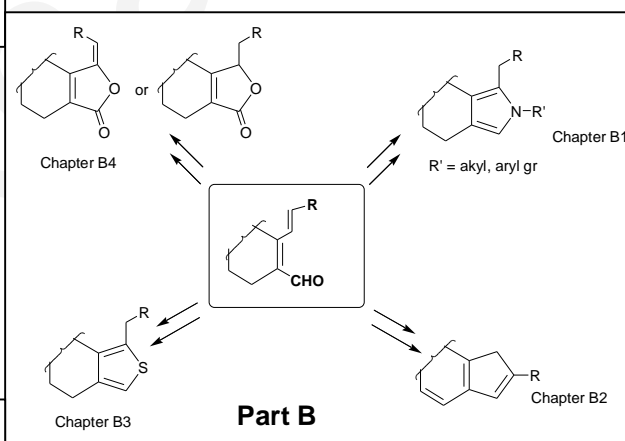
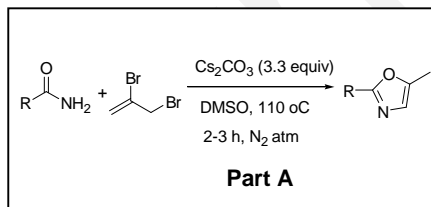


## ABSTRACT

### Efficient Synthetic Routes to Important Heterocycles and Carbocycles

The synthesis and study of carbocyclic and heterocyclic compounds, is a subject of immense importance both for academia and industry. Oxazole, pyrrole, thiophene, phthalide and phenanthridinone units are important heterocyclic moieties which occur widely in natural and synthetic biologically active molecules. Carbocyclic benz[*e*]indenes, structurally related to steroids, are of interest as lead compounds for identifying new drug candidates. Our focus was centered on the development of new synthetic methodologies for these classes of compounds.

Investigations embodied in this dissertation are summarized into three parts, namely **Part A**, **Part B** and **Part C**. In **Part A**, a Cs<sub>2</sub>CO<sub>3</sub>-mediated one-pot methodology for the synthesis of substituted oxazoles has been described. **Part B** has been subdivided in four chapters (**B1–B4**) where syntheses of pyrrole, benz[*e*]indene, thiophene and phthalide derivatives were achieved from common scaffold. In **Part C**, we have developed a general methodology for the preparation of phenanthridinone derivatives employing intramolecular Ullmann reaction.



**Keywords:** Methodology, oxazole, pyrrole, thiophene, phthalide, phenanthridinone, benz[*e*]indene.