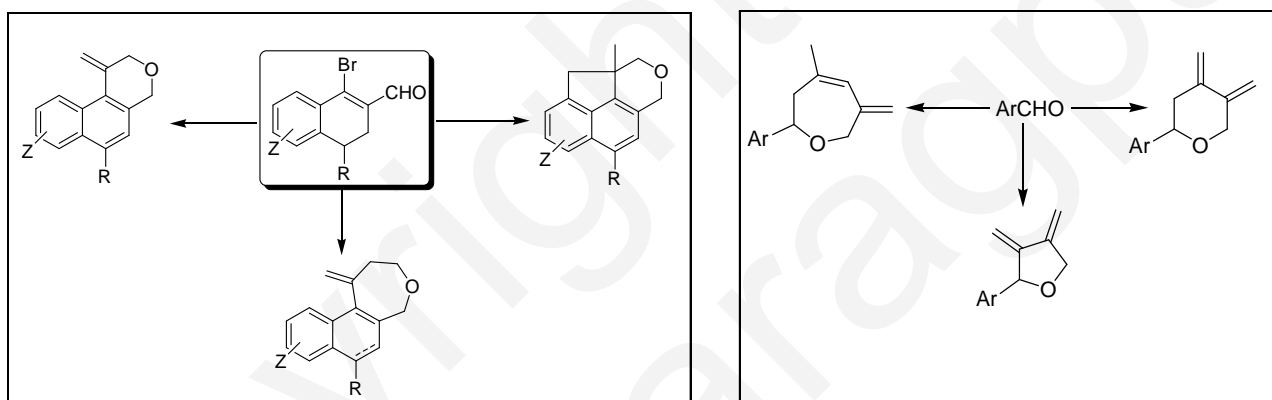


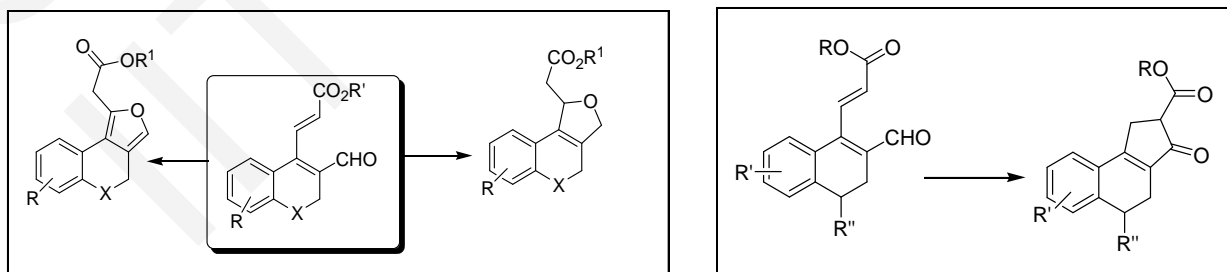
ABSTRACT

Synthesis of Carbocyclic and Heterocyclic Compounds by Heck and Michael Reactions

Palladium catalyzed intramolecular Heck reaction is a powerful method for the construction of heterocyclic and carbocyclic molecules. The preparation of heterocyclic derivatives has been an area of great interest due to their biological activities. Pyran, furan, oxepine units are important heterocyclic compounds which are the core structure of many natural products. Being inspired by above facts, we have prepared these heterocycles by palladium catalyzed intramolecular Heck reaction from β -bromo vinylaldehydes and arylaldehydes in chapter-1 and chapter-2 respectively.



Michael addition has proved to be very useful method for C-C and C-O bond formation with numerous applications in the synthesis of carbocyclic and heterocyclic molecules. In chapter-3 we have prepared fused dihydrofuran and furan derivatives by intramolecular Michael addition. In Chapter-4 we have developed a general method for the preparation of cyclopentenones derivatives via thiol mediated Michael-aldol reaction.



Keywords: Heck, Michael, Pyran, Furan, Dihydrofuran, Oxepine, Cyclopentenone, Cyclization.