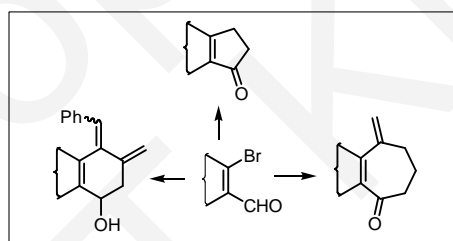


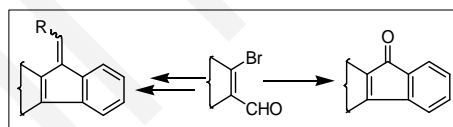
Palladium-Catalyzed Cyclizations towards Synthesis of Important Cycloalkenones and Aromatic Hydrocarbons

Among the transition metal catalysts palladium has emerged as one of the most versatile and useful transition metal in organic synthesis. The synthesis and study of carbocyclic compounds have attracted much attention from both academia and industry. Cyclopentenone, cycloheptenone, poly-ene substituted cyclohexenol, fluoren-9-one and 9-fluorenylidene moieties are frequently found in many natural products and bioactive molecules. There are large numbers of polyarenes which are utilized as base molecules in many electronic devices as well as the ligands in many transition metal catalyzed asymmetric synthesis. Our focus was centered on the development of new strategies towards the synthesis of this class of compounds based on palladium chemistry.

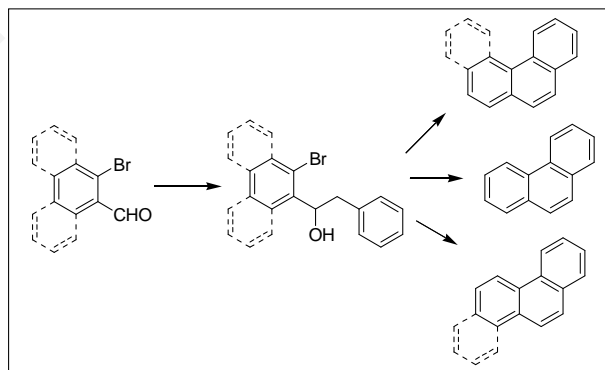
The dissertation entitled “*Palladium-catalyzed cyclizations towards synthesis of important cycloalkenones and aromatic hydrocarbons*” has been organized in three chapters. **Chapter 1** has been subdivided in three parts (**1A-1C**) where synthesis of five, six, seven membered-carbocycles was achieved via Pd-catalyzed intramolecular cyclization. In **Chapter 2** we have developed a general route to polycyclic aromatic hydrocarbons by exploiting palladium-catalyzed intramolecular C-H activation. **Chapter 3** being subdivided in two parts (**3A-3B**) describes a convenient, one-pot synthetic approach towards fluoren-9-one and 9-fluorenylidene employing palladium-catalyzed cross-coupling reactions in pseudo-domino process.



Chapter 1



Chapter 3



Chapter 2

Keywords: Palladium-catalyst, methodology, cycloalkenone, poly-ene-substituted cyclohexenol, polycyclic aromatic hydrocarbons, fluoren-9-one, 9-fluorenylidene.