PREFACE

C-Glycosides are found in nature and showed various biological activities. *C*-glycosides are more stable when compared with *O*-glycosides since they are inert towards the enzymatic or chemical hydrolysis. Because of the stability, *C*-glycosides have become the primary choices for the development of carbohydrate based drugs. Recently, there has been tremendous interest towards the development of sugar based drugs, vaccines, cosmetics, diagnostic tools, etc. due to their structural diversity and favorable physicochemical properties.

In this context, the thesis entitled "**Palladium-Catalyzed Stereo-Controlled Synthesis of 2-Deoxy Aryl-*C*-Glycosides**" will introduce various methods for synthesis of 2-Deoxy aryl-C-glycosides. **Chapter 1** gives a general introduction to different glycosides *C*-glycosides, *S*-glycosides, *O*-glycosides and *N*-glycosides compounds, mainly about 2-deoxy aryl-*C*-glycosides. **Chapter 2** will introduce the palladium catalyzed stereocontrolled synthesis of aryl-*C*-glycosides using glycals and arenediazonium salts at room temperature. **Chapter 3** will describe the palladium-catalyzed one-pot stereospecific synthesis of 2-deoxy aryl-*C*-glycosides from glycals and anilines in the presence of *tert*-butyl nitrite. **Chapter 4** will highlight the palladium catalyzed stereo-selective 1,4-conjugate addition of arylboronic acids to enones derived from glycals. **Chapter 5** will present the palladium-catalyzed regioselective oxidative heck coupling arylboronic acids to glycal enones: a simplest approach for the stereoselective preparation of 2-deoxy β-aryl-c-glycosides. Finally, **Chapter 6** will summarize and conclude the total thesis work.