

Abstract

This diploma thesis is focused on the use of organocatalytic concept for the preparation of diastereo- and enantiomerically pure five-membered heterocyclic and carbocyclic compounds from the easily available starting materials.

The first part of the work is dedicated to the enantioselective synthesis of heterocyclic systems (imidazolidinones) from α,β -unsaturated aldehydes and N,N' -functionalized urea derivatives catalyzed with commercially available secondary amines.

The second part describes a study for the preparation of five-membered carbocycles based on domino Michael/ α -substitution reaction from the convenient building blocks via iminium-enamine activation.