

Abstract

This diploma thesis deals with the synthesis of chiral five-membered carbocyclic molecules via iminium-enamine activation using chiral secondary amines. The first part of this diploma thesis describes the synthesis of starting materials for domino Michael addition/ α -alkylation reaction, i.e. the synthesis of α,β -unsaturated aldehydes and 1-bromo-3-nitropropane. The second part of this diploma thesis is focused on the optimization of reaction conditions and the application of the domino Michael addition/ α -alkylation reaction, that leads to the formation of cyclopentancarbaldehydes with contiguous stereogenic centres.

Key words

Asymmetric synthesis, organocatalysis, domino reaction, Michael addition, cyclopentanes.