

## **Abstract**

This bachelor thesis is focused on stereoselective preparation of spiro compounds using organocatalytic approach and their transformation to substrates with potential biological activity.

First part of this work deals with stereoselective synthesis of spiro compounds using heterocyclic enals and sulphur-containing nucleophile. These organocatalytic reactions were catalysed by chiral secondary amine utilizing tandem Michael/Michael/aldol reaction.

Second part of this work is focused on transformation of prepared unsaturated heterocyclic spiro aldehydes to corresponding carboxylic acids, which will be studied for their possible biological activity.

## **Key words**

Enantiomer, diastreomer, stereoselective synthesis, organocatalysis, Michael addition, aldol condensation, Wittig reaction, Pinnick oxidation.