A Diploma Thesis Abstract :

Picolinamide Derivatives of *N*-methyl Valine Used as New Possible Chiral Organocatalysts in the Enantioselective Reduction of Aromatic Ketimines with Trichlorosilane.

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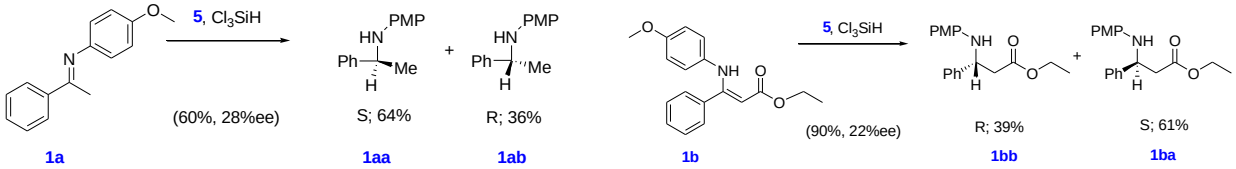
Chiral substances have become popular for pharmaceutical industry recently, due to the differences between enantiomers‘ and racemate’s efficiency and/or safety.
Asymmetric organocatalysis is a perspective approach in the synthesis of chiral substances, used as new drugs or their synthons. No doubt that this way is cheaper and easier than methods using splitting a racemic mixture. This method was developed as an attractive alternative of transition metals-using procedures (with Pd, Ir, Ti), while completely excluding their toxicity, limited usage and high costs.
Chiral reduction of *N*-aryl ketimines like **1a**, **1b** with trichlorosilane can be catalyzed by as *N*-methyl valine derivatives **A** (10 mol% (≤92% ee)) as picolinic derivatives of modified proline **B** (10 mol% (80% ee)), both using toluene as the solvent and room temperature, reaching high enantioselectivity



The structure of prepared substances **5**, **5a** that uses functional and structural combination of catalysts **A**, **B** allows us to compare the efficiency and selectivity in reactions catalyzed formerly by **A**, **B** and now, catalyzed by **5**, **5a**. However, substances **5**, **5a**, do not seem to be more catalytically active and enantioselective than previously used **A**, **B**, either for chiral reduction of aromatic ketimines **1a**, **1b** and ketones **2a** with trichlorosilane, or for allylation of aromatic aldehydes with allyltrichlorosilane **3a**.