

Abstract

This thesis deals with molecular recognition of chiral compounds in the gas phase. Tandem mass spectrometry was used as a detection method in this case. Compounds, which have been studied, were MacMillan organocatalysts and proline with different chirality. Three experiments were carried out. Determination of activation energy for fragmentation of proline complexes with amines, where we have studied complexes with 2-aminobutane and 2-aminohexane of different chirality. Fragmentation studies of diastereoisomeric complexes of Cu^{2+} and three chiral ligands were carried out at two different collision energies. There the largest chiral effect was observed. The last topic was a measurement of the rate constants. It was aimed at dissociation and exchange reactions of complexes.

Keywords: mass spectrometry, kinetic method, chiral compounds, chiral recognition, proline, organocatalysis