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Synthesis of ScCO_2 soluble perfluorinated chiral Schiff-base ligand and its metal complexes

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Asymmetric reactions carried out using homogeneous catalysts are used in the preparation of many chiral compounds especially in pharmaceutical industry. Enantiopure chiral complexes play a major role in performing asymmetric synthesis in homogeneous catalysis reactions. There is a lot of interesting about chiral binaphthyl Schiff base complexes for using asymmetric reactions. Due to difficulties in separation of catalyst from products in purification steps and high cost of catalyst, researchers are seeking more convenient methods for synthesis. Hence researches continue to focus on supercritical fluids, ionic liquids and biphasic liquid systems as new reaction media. Especially homogeneous catalysts in supercritical carbon dioxide (ScCO_2) are often preferred in very common organic synthesis.

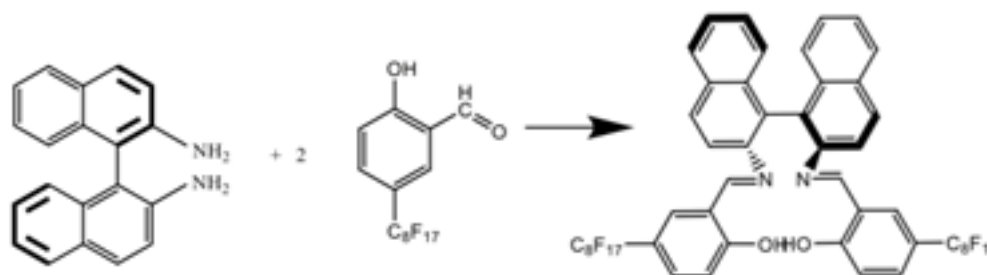


Figure 1. Reaction of chiral ligand synthesis

In this work, Schiff base ligands were prepared from condensation of perfluorinated aldehydes with binaphthyl amines (Fig.1.). For this step, firstly perfluorinated aldehydes were synthesized, then the condensation was occurred. Transition metal complexes of this ligand were prepared as chiral catalyst for various asymmetric reactions in ScCO_2 . Effect of reaction parameters such as pressure, temperature, reaction time, catalyst/substrate ratio on the enantio selectivity of catalyst were also be investigated.

Biography

Burcu Darendeli has completed her BSc from Hacettepe University and completed her MSc from Çukurova University. She still continues her PhD at the same university. Her research areas are organometallic complexes, catalysts, nanomaterials and ScCO_2 media.

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