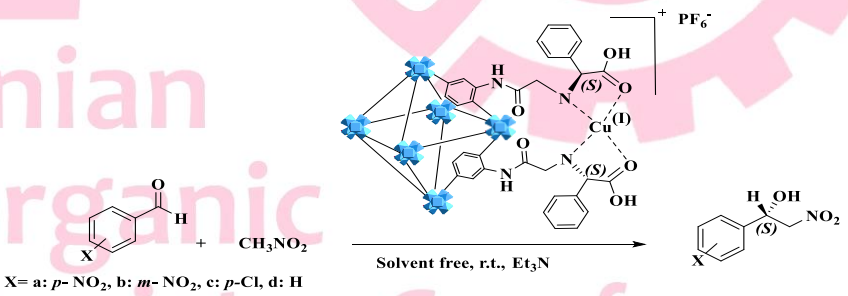
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# Synthesis of *β*-nitroalcohols in the presence of amino acid-based chiral metal-organic framework.

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UiO-66-$NH_2$ is a type of metal-organic framework based on zirconium which has higher thermal and chemical stability than other metal-organic frameworks. furthermore, the $NH_2$ group in Metal-organic framework UiO-66-$NH_2$ can be functionalized with chiral ligands [1]. The formation of C–C bonds in the manufacture of valuable molecules using MOFs as heterogeneous catalysts is an important research field with applications in the chemical and pharmaceutical industries [2, 3]. In this work, the UiO-66-$NH_2$ was prepared by solvothermal method and functionalized with 2-chloroacetyl chloride, then the chiral amino acid, L-phenylglycine, was immobilized on it. The structure of synthesized heterogeneous chiral ligand was characterized by XRD, FE-SEM, BET, FT-IR and TGA techniques. Subsequently, copper salt was incorporated in the chiral metal-organic framework and it was used in the asymmetric Henry reaction for the preparation of chiral β-nitroalcohols under nitrogen atmosphere and different conditions (solvent, base, temperature, catalyst, etc). The resulting products were obtained with high efficiency and suitable optical purity in a short period of time (Scheme 1).




**Scheme 1:** Synthesis of β-nitroalcohols in the presence of amino acid-based chiral metal-organic framework

***Keywords:*** Chiral metal-organic frameworks, Chiral catalyst, Henry reaction, β-nitroalcohols

**References**

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