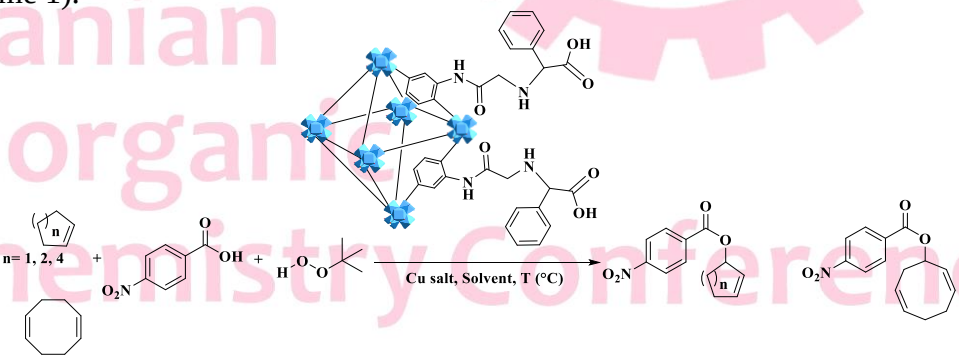
22nd Iranian Chemistry Conference, 23-25 August, 2023
University of Kurdistan

Synthesis of allylic esters using phenyl glycine-functionalized metal-organic framework and copper salts

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Metal-organic frameworks (MOFs) are a class of catalysts which have attracted the attention of many researchers, due to their different structural and physical advantages such as the ability to adjust the pore size, high biocompatibility, relatively high mechanical and thermal stability. These structures are used in many fields such as adsorption and separation, chemical sensors, drug carriers, heterogeneous catalysts, etc. [1, 2]. Direct activation of C-H bonds is one of the most important reactions in organic synthesis. The oxidation of these bonds in the allylic position of alkenes is known as the Kharasch-Sosnovsky reaction [3]. In this work, Metal-organic framework UiO-66-NH_2 is prepared from the reaction of $ZrCl_4$ with 2-aminoterphthalic acid in DMF by solvothermal method and then functionalized with 2-chloroacetyl chloride. After ensuring the functionalization of the metal-organic framework, the phenyl glycine (2-amino-2-phenylacetic acid) was immobilized on it and the heterogeneous ligand was obtained. The products of each step were characterized with SEM, EDX, BET, TGA, XRD and FT-IR techniques. Finally, the copper complex of the synthesized heterogeneous ligand was used in the allylic oxidation of alkenes and the resulting allylic esters were obtained in good to excellent yields (Scheme 1).



Scheme 1: Synthesis of allylic esters using synthesized heterogeneous ligand and copper salts

Keywords: Metal-organic frameworks, UiO-66-NH_2, Kharasch-Sosnovsky reaction, Allylic esters

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