

Solvent-Free Synthesis of Dihydropyrazolo [4',3':5,6] Pyrano [2,3-d] Pyrimidine-5,7-Diones Derivatives by using Magnetic Hf- UiO-66 MOFs

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Abstract: In this study, we successfully synthesized $Fe_3O_4@SiO_2@UiO-66-Hf$ and $Fe_3O_4@SiO_2@UiO-66-Hf$ (HI) by microwave assisted solvothermal method and applied for the synthesis of dihydropyrazolo[4',3':5,6]pyrano[2,3-d]pyrimidine-5,7-diones via one-pot four-component reaction of hydrazine hydrate, ethyl acetoacetate aldehydes and barbituric acid/ dimethyl barbituric acid under solvent-free conditions. After completion of the reaction, the catalyst was separated by external magnet and reused. So, recycling system, simple work-up, excellent yields and short reaction times makes our research green and convenient for preparation of these classes of organic compounds. In this study we are also observe $Fe_3O_4@SiO_2@UiO-66-Hf$ (HI) than $Fe_3O_4@SiO_2@UiO-66-Hf$ that is more Effective catalyst for synthesis.

Keywords: MOFs, Heterocyclic compounds, UiO-66, solvent free, Multicomponent reaction

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