

عنوان مقاله:

Synthesis, Characterization, and Application of $\text{CoFe}_2\text{O}_4 @ \text{SiO}_2 @ \text{CPTES} @ \text{Melamine}$ Nanoparticles as a Magnetic Catalyst for the Synthesis of Pyrazole Derivatives

محل انتشار:

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خلاصه مقاله:

In this work, an efficient procedure for the synthesis of pyrazole derivatives via a one-pot multi-component reaction of phenyl hydrazine, malanonitrile, and various aromatic aldehydes using $\text{CoFe}_2\text{O}_4 @ \text{SiO}_2 @ \text{CPTES} @ \text{Melamine}$ as a magnetic nanocatalyst in water under room temperature conditions is reported. This nanocatalyst was synthesized in several steps and identified by various techniques including Fourier-transform infrared (FT-IR), scanning electron microscopy (SEM), energy dispersive X-ray (EDX), thermogravimetric analysis (TGA), X-ray diffraction (XRD), and vibrating sample magnetometer (VSM) techniques. The advantages of using this magnetic nanocatalyst in this research include easy synthesis, efficiency, non-toxicity, high-efficiency product production, short reaction time, and reusability.

کلمات کلیدی:

Amino-۱H-pyrazole-۴-carbonitrile, Phenylhydrazine, Malononitrile benzaldehyde-۵

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