

## Catalytic Performance of Fe<sub>3</sub>O<sub>4</sub> Nanoparticles (Fe<sub>3</sub>O<sub>4</sub> NPs) in the Synthesis of Pyrazolines

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**Abstract :** Different Pyrazoline derivatives were synthesized by cyclization of substituted chalcone derivatives in presence of hydrazine hydrate. A series of novel 1,3,5-triaryl pyrazoline derivatives has been synthesized by the reaction of chalcone and phenylhydrazine in the presence of the Fe<sub>3</sub>O<sub>4</sub> NPs, in high yields. The structures of compounds obtained were determined by IR and <sup>1</sup>H NMR spectra. Fe<sub>3</sub>O<sub>4</sub> NPs was recycled and no appreciable change in activity was noticed after three cycles.

**Keywords :** pyrazoline, chalcone, nanoparticles, Fe<sub>3</sub>O<sub>4</sub>, catalyst, synthesis

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