

# Fe<sub>3</sub>O<sub>4</sub> Nanoparticles as an Efficient and Magnetically Recoverable Catalyst for the Synthesis of 3,4-Dihydropyrimidin-2(1H)-ones under Solvent-Free Conditions

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**摘要** The catalytic activity of Fe<sub>3</sub>O<sub>4</sub> nanoparticles (NPs) in a one-pot three component condensation reaction consisting of an aromatic aldehyde, urea or thiourea, and a β-dicarbonyl under solvent-free conditions was investigated. This reaction affords the corresponding dihydropyrimidinones (thiones) in high to excellent yields. Compared with the classical Biginelli reactions this method consistently gives a high yield, easy magnetic separation, a short reaction time, and catalyst reusability.

**关键词:** dihydropyrimidinones dihydropyrimidinthiones ferrocenic oxide nanoparticle one-pot condensation solvent-free

**Abstract:** The catalytic activity of Fe<sub>3</sub>O<sub>4</sub> nanoparticles (NPs) in a one-pot three component condensation reaction consisting of an aromatic aldehyde, urea or thiourea, and a β-dicarbonyl under solvent-free conditions was investigated. This reaction affords the corresponding dihydropyrimidinones (thiones) in high to excellent yields. Compared with the classical Biginelli reactions this method consistently gives a high yield, easy magnetic separation, a short reaction time, and catalyst reusability.

**Keywords:** dihydropyrimidinones, dihydropyrimidinthiones, ferrocenic oxide nanoparticle, one-pot condensation, solvent-free

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