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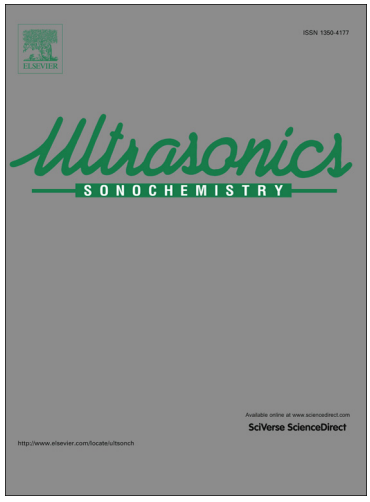

Short communication

Ultrasonic Accelerated Knoevenagel Condensation by Magnetically Recoverable $MgFe_2O_4$ Nanocatalyst: a Rapid and Green Synthesis of Coumarins under Solvent-Free Conditions

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Ultrasonic Accelerated Knoevenagel Condensation by Magnetically Recoverable $MgFe_2O_4$ Nanocatalyst: a Rapid and Green Synthesis of Coumarins under Solvent-Free Conditions

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Abstract

The novel and green procedure to synthesis of 3-substituted coumarins was performed through the Knoevenagel condensation between various salicylaldehydes and 1,3- dicarbonyl compounds by $MgFe_2O_4$ nanoparticles as an efficient catalyst under solvent-free condition using ultrasound irradiation. The nano catalyst was easily recovered by an external magnet and reused for several times without significant loss of its catalytic performance. Compare to the previous works, this progressive protocol have advantages such as simple workup, high yields of coumarins, solvent free condition, environmentally benign and short reaction times.

Keywords: Coumarin, Knoevenagel, Ultrasonic, $MgFe_2O_4$ Nanoparticles, Solvent-free