

عنوان مقاله:

Green Synthesis of ZnO Nanoparticles via Sol-gel Method and Investigation of Its Application in Solvent-free Synthesis of 12-Aryl-tetrahydrobenzo[α]xanthene-11-one Derivatives Under Microwave Irradiation

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خلاصه مقاله:

In this work, zinc oxide (ZnO) nanoparticles were fabricated using Arabic gum as a reducing and stabilizing agent by the novel sol-gel method without adding any surfactants. The synthesized nanoparticles were characterized by Fourier transform infrared spectroscopy (FTIR), powder X-ray diffraction (XRD), and scanning electron microscopy (SEM). Subsequently, ZnO nanoparticles as efficient catalysts were consumed for the three-component coupling of 2-naphthol, aldehydes, and dimedone under microwave irradiation and solvent-free conditions in order to furnish the corresponding synthesis of 12-aryl-tetrahydrobenzo[α]xanthene-11-one derivatives in high yields.

کلمات کلیدی:

Zinc oxide nanoparticles, 12-aryl -tetrahydrobenzo[α]xanthene-11-one derivatives, Solvent-free, Microwave irradiation

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