

Sustainable One-Pot Synthesis of Pyrazoline Derivatives Using Recyclable ZnO Nanoparticles in Aqueous Medium

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Abstract: *An efficient approach was devised for the synthesis of pyrazoline derivatives involving benzaldehyde, aromatic ketones, and phenyl hydrazine in aqueous media, employing ZnO nanoparticles as a catalyst at 40°C. This one-pot addition-cyclocondensation strategy afforded pyrazoline derivatives in good to excellent yields. The ZnO nanoparticles exhibited high reusability with negligible loss of catalytic performance. The structural elucidation of the obtained compounds was carried out using advanced analytical techniques.*

Keywords: ZnO nanoparticle, aromatic aldehyde, cyclcondensation, acetophenone etc