IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 3, December 2024

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

Kailash R. Borude

Department of Chemistry

Katruwar arts Ratanlal Kabra Science and B. R. Mantri Commerce College, Manwat, Parbhani (M.S.)

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.

DOI: 10.48175/568

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

