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Microwave-Assisted Synthesis of Novel Acylhydrazoneoximes: A Comparative Evaluation with the Conventional Method

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Abstract: *The present work reports an efficient microwave-assisted synthesis of novel acylhydrazoneoxime ligands derived from para-substituted isonitrosoacetophenones and terephthalohydrazide. The synthesized compounds were characterized using elemental analysis, UV–Visible, FTIR, ^{1}H-NMR, ^{13}C-NMR, and mass spectrometry techniques. A comparative assessment between the conventional reflux method and microwave irradiation clearly demonstrates the superiority of the microwave-assisted approach in terms of reaction time, yield, energy efficiency, and operational simplicity. Microwave synthesis resulted in higher yields within significantly shorter reaction times, highlighting its advantages as a green and sustainable alternative to conventional heating methods.*

Keywords: Microwave-assisted synthesis, Conventional method, Acylhydrazoneoximes, Isonitrosoacetophenones, Terephthalohydrazide

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