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$ZnCl_2$ Supported with Sand: An Efficient Synthetic Protocol for synthesis of Biginelli Products

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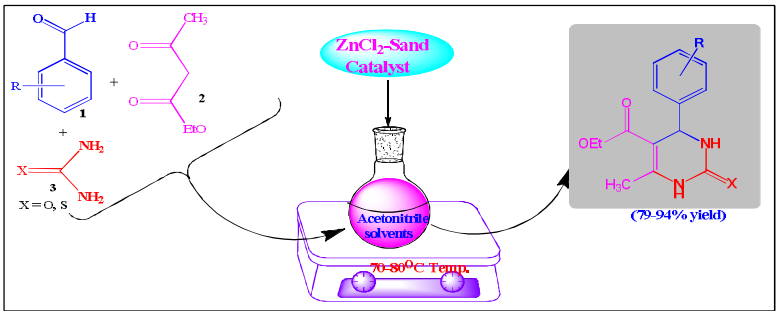
ABSTRACT

A highly efficient synthetic procedure was developed for the synthesis of pharmacologically useful 3,4-dihydropyrimidin-2-(1H)-ones/thiones using one-pot three component reaction of aromatic aldehyde, ethyl acetoacetate and urea/thiourea catalyzed by newly prepared heterogeneous catalyst ($ZnCl_2$ supported with Sand) in presence of ethanol solvent. Mild reaction conditions, excellent yields, operational simplicity, no tedious separation procedures, clean reaction profiles, energy-efficiency, and high atom-economy as well as the use of inexpensive and environmentally benign catalyst are the key advantages of the present method. All synthesized compounds were characterized by IR, ^{1}HNMR & ^{13}C NMR and mass spectral data

Graphical Abstract:



General synthesis of *Dihydropyrimidines using $ZnCl_2$-Sand Catalyst.*

Keywords: Heterogeneous Catalyst – ($ZnCl_2$ - Sand), Dihydropyrimidines, Biginelli Reaction, Eco-friendly Protocol.