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Ultrasound-assisted an Efficient Knoevenagel Reaction Catalyzed by Ionic Liquid

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ABSTRACT

A convenient and environmentally benign route has been developed for the Knoevenagel condensation of 4-oxo-(4H)-1-benzopyran-3-carbaldehydes and 2-chloroquinoline-3-carbaldehyde with various active methylene compounds viz. malononitrile, ethylcyanoacetate, cyanoacetic acid, cyanoacetamide and Meldrum's acid were carried out in the presence of catalytic amount of 1-benzyl-3-methylimidazolium dihydrogen phosphate ([bnmim]H_2PO_4) acidic ionic liquid under ultrasound at room temperature. This method affords the present method are mild reaction conditions, short reaction time, simple work-up procedure, excellent yield. Additionally, the ionic liquid was successfully reused for four cycles without significant loss of activity.

Keywords: Knoevenagel reaction, Ionic liquid, Hetero aryl aldehyde, Active methylene compound, Ultrsound.