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Introduction of a new member of bipyridine-based molten salt containing copper as an efficient and reusable catalyst for the synthesis of isoxazole derivatives

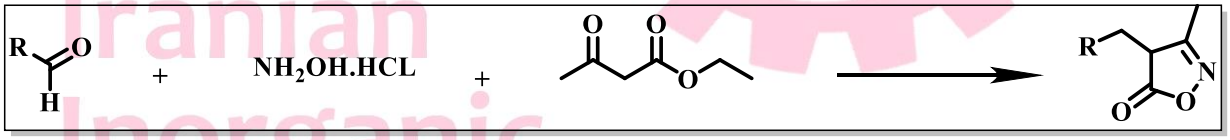
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Isoxazoles constitute a crucial class of heterocyclic compounds composed of five-membered rings, with one oxygen and one nitrogen atom located in adjacent positions. The distinctive structural motif of isoxazole confers diverse non-covalent interactions. The transformations of their derivatives encompass electrophilic substitution reactions, nucleophilic substitution, as well as side-chain substitution reactions in isoxazoles. Also hold particular significance, exhibiting a diverse range of biological activities and therapeutic potential. Specifically, isoxazole has demonstrated promising anticancer, antituberculosis, anti-inflammatory, and acetylcholinesterase inhibitory properties in pharmaceutical applications. [1,2]

One of the uses methods for it preparation of isoxazoles is the reaction between aromatic aldehyde, hydroxylamine, and ethyl acetoacetate, which is carried out in a water solvent and in the presence of an acid catalyst.[3] In this work, a novel approach utilizing a *Lewis* acidic molten salt based on bipyridine was employed for the synthesis of isoxazole derivatives (Scheme 1). The preparation of this catalyst is uncomplicated. Moreover, use of this catalyst presents various benefits such as effortless and facile separation, considerable product yield, and brief reaction time.



Scheme 1. Synthesis of isoxazole derivatives in the presence of Bipyridine-based molten salt.

Keywords: Isoxazole, Hetrocyclic, Bipyridine, Molten Salt

References

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