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Ionic liquid immobilized Cu (I)-Hydrazone-Triphenylphosphine Complex: An Easily recyclable Catalytic System for Suzuki and Heck Cross Couplings

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Abstract

A highly efficient, reusable catalytic system towards Heck and Suzuki cross-coupling reactions was observed for an inexpensive copper complex dispersed in ethyl-methyl imidazolium hexafluorophosphate medium, [EMIM] PF₆. The reaction conditions were optimized by studying the effects of temperature, catalyst concentration, solvent and time. The method functions for a variety of substrates towards the cross coupling reactions. Most notably, the catalyst-ionic liquid mixture was easily recoverable and reused for six times without much loss in the catalytic activity, causing significantly a very low impact on the environment.

Keywords:

Copper complex, ionic liquid, immobilisation, Heck reaction, Suzuki reaction.

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