عنوان مقاله:

Copper/Cobalt-Catalyzed Green Multicomponent Coupling Reactions Between Pyrimidine And Chromene In Aqueous Environment

محل انتشار:

سیزدهمین کنفرانس بین المللی راهکارهای نوین در مهندسی، علوم اطلاعات و فناوری در قرن پیش رو (سال: 1401)

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خلاصه مقاله:

Copper/Cobalt complex immobilized on chitosan is synthesized and characterized by different techniques. The synthesized catalyst was used as a new water dispersible heterogeneous catalyst in the Chromopyrimidine and Thiochromopyrimidine reactions in pure water. By this method, different types of Chromopyrimidines and Thiochromopyrimidines were synthesized in good to high yields by the reaction of a variety of benzaldehydes, and coumarin with urea/ or thiourea, respectively. The presence of ionic liquids as hydrophilic groups on the surface of the catalyst confers a highly water dispersible, active and yet recoverable bi-metallic catalyst. The catalyst, being heterogeneous in nature, can be easily recycled and reused up to five consecutive runs without much decrease in catalytic activities thereby increasing sustainability of the procedure. A few other cutting-edge advantages of the present one-pot multicomponent methodology are high atom economy, low catalyst loading, milder reaction conditions, higher yield of the desired product, simple work up procedure, easy handling of the catalyst, etc. The present methodology showed good results in gram scale conditions thereby indicating its applicability in academic as well as industrial settings in the near future.

کلمات کلیدی:

Chitosan, Bi-metallic, Chromene, Pyrimidine, Multicomponent Reaction