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Synthesis of palladated magnetic nanoparticle (Pd@Fe3O4/AMOCAA) as an efficient and heterogeneous catalyst for promoting Suzuki and Sonogashira cross-coupling reactions

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Abstract

Palladium supported magnetic nanoparticle (Pd@Fe3O4/AMOCAA) was easily prepared in the presence of Scrophularia striata extract and fully characterized by FT-IR, SEM, VSM, TEM, TGA, XRD and EDAX. It was successfully employed as an easily separable and reusable effective heterogeneous catalyst classical Suzuki and Sonogashira cross-coupling reaction. Sustainability of the methodology was reserved by easy recovery of the catalyst using an external magnet and reusing it for 7 times without appreciable loss of its catalytic activity.

Keywords: magnetic support, Pd catalyst, Sonogashira reaction, Sustainable chemistry, Suzuki reaction