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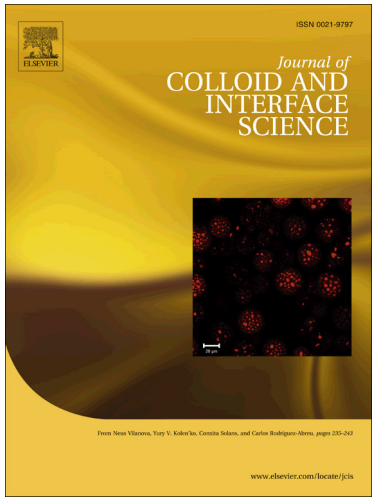

One-pot hydrothermal synthesis of magnetically recoverable palladium/reduced graphene oxide nanocomposites and its catalytic applications in cross-coupling reactions

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One-pot hydrothermal synthesis of magnetically recoverable palladium/reduced graphene oxide nanocomposites and its catalytic applications in cross-coupling reactions

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Abstract: A facile, green, economical approach was designed to deposit palladium nanoparticles on magnetic reduced graphene oxide nanosheets (Pd-Fe_3O_4/rGO) via a one-pot hydrothermal synthesis method. The prepared Pd-Fe_3O_4/rGO nanocomposites were thoroughly characterized by Transmission electron microscopy, Scanning electron microscopy, Fourier-transform infrared spectroscopy, X-ray diffraction, and Raman spectroscopy. Importantly, the highly efficient catalytic property of the as-obtained Pd-Fe_3O_4/rGO catalyst was demonstrated for the Suzuki-Miyaura coupling reaction and Mizoroki-Heck coupling reaction. Significantly, the Suzuki-Miyaura coupling reactions could be efficiently performed in an environmentally friendly aqueous solution with no need for further additives. Besides, the nanocomposites could be conveniently separated from reaction system with an external permanent