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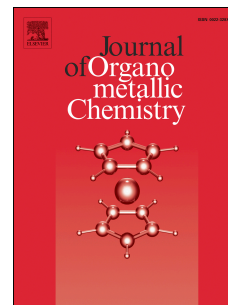
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One-Step Synthesis of Pd-NPs@Cu₂(BDC)₂DABCO as Efficient Heterogeneous Catalyst for The Suzuki–Miyaura Cross-Coupling Reaction

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Abstract

A new heterogeneous palladium catalyst has been synthesized by one- step encapsulation in nanoporous metal-organic framework Cu₂(BDC)₂(DABCO) (BDC=1,4-benzenedicarboxylate, DABCO= 1,4-diazabicyclo[2.2.2]octane) under a temperature control program. Supported Pd nanoparticles (Pd-NPs@Cu₂(BDC)₂(DABCO)) were characterized by X-ray diffraction, BET analysis, field emission scanning electron microscopy, transmission electron microscopy, inductively coupled plasma atomic emission and X-ray photoelectron spectroscopy (XPS). The Highly dispersed Pd particles (Pd-NPs@Cu₂(BDC)₂(DABCO)) offered a very efficient catalytic activity towards the Suzuki–Miyaura cross-coupling reaction.

Keywords: Pd@ Cu₂(BDC)₂(DABCO, Palladium nanoparticle, One-step encapsulation, Suzuki–Miyaura Coupling, Nanoporous, Cu₂(BDC)₂DABCO, Heterogeneous Catalyst

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