Palladium(0) nanoparticles encapsulated in diamine-modified glycidyl methacrylate polymer (GMA-CHDA) applied as catalyst of Suzuki-Miyaura cross-coupling reaction.

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Streszczenie

Cyclohexyldiamine-modified glycidyl methacrylate polymer (GMA-CHDA) in the form of gel-type beads was used to encapsulate Pd(0) nanoparticles 4–15 nm in diameter and applied as a new, reusable catalyst for the Suzuki–Miyaura cross-coupling reaction of 2- and 4-bromotoluene with phenylboronic acid. It was found that the precatalyst preparation methodology strongly influenced its catalytic activity. The best results (100% yield of the product) were obtained when GMA-CHDA was first treated with hydrazine (reducing agent for Pd(II)) and next with $PdCl_2$ solution. The new catalyst acts heterogeneously, and the post-reaction solution after catalyst separation is not catalytically active, suggesting that there is no leaching.

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