Influence of palladium colloid synthesis procedures on catalytic activity in methoxycarbonylation reaction.

Autorzy

Andrzej Gniewek

Józef J. Ziółkowski

Anna M. Trzeciak

L. Kępiński

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Streszczenie

Palladium colloids were prepared by chemical reduction of an aqueous solution of palladium dichloride with the reducing agents pyrogallol, chromium(II) acetate, and hydrazine in the presence of polyvinylpyrrolidone (PVP) as a stabilizing agent. The colloids thus obtained were characterized by means of powder X-ray diffraction (XRD), transmission electron microscopy (TEM), and energy-dispersive X-ray microanalysis (EDX). Their catalytic activity was studied in a test reaction, methoxycarbonylation of iodobenzene. The choices of reducing agent and reduction conditions enables to synthesize colloids with various mean nanoparticle sizes (ranging from 1.9 to 19.8 nm) and nanoparticle morphologies. These two factors play a decisive role from the standpoint of catalytic activity of the systems under study.

Słowa kluczowe

Pd colloid, nanaoparticles, Methoxycarbonylation, TEM, XRD

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