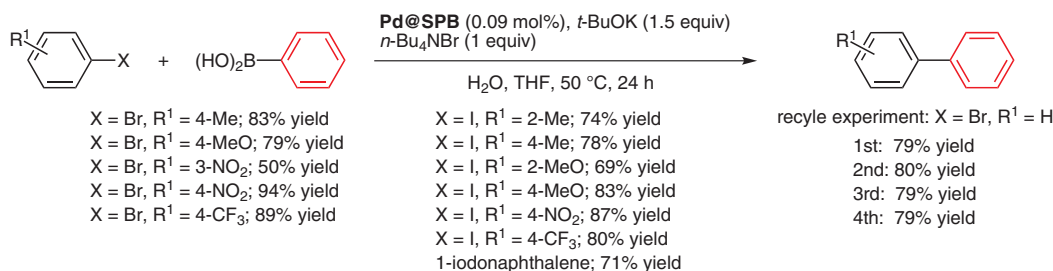
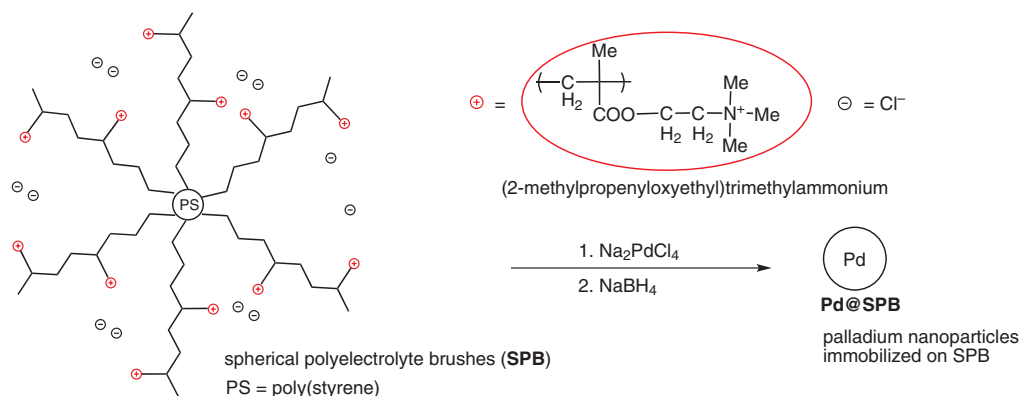


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 Suzuki- and Heck-Type Cross-Coupling with Palladium Nanoparticles Immobilized on Spherical Polyelectrolyte  
 Brushes  
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# Suzuki–Miyaura Coupling Reaction Using Palladium Nanoparticles Immobilized on SPB



**Significance:** Palladium nanoparticles immobilized on spherical polyelectrolyte brushes (Pd@SPB) were synthesized and found to promote the Suzuki–Miyaura cross-coupling reaction. Thus, the spherical polyelectrolyte brushes having the (2-methylpropenyloxyethyl)trimethylammonium cation were prepared according to the reported procedures (Y. Mei, G. Sharma, Y. Lu, M. Ballauff *Langmuir* **2005**, *21*, 12229). The reaction of SPB with Na<sub>2</sub>PdCl<sub>4</sub> followed by reduction with NaBH<sub>4</sub> gave the palladium nanoparticles immobilized in the SPB matrix (Pd@SPB). The Suzuki–Miyaura coupling reaction of aryl halides with phenylboronic acid was carried out in the presence of Pd@SPB (0.09 mol% Pd) in H<sub>2</sub>O–THF to give the corresponding biphenyls in good yield (14 examples, 50–94% yield).

**Comment:** Recently, the authors have reported the preparation of platinum nanoparticles immobilized on SPB (Pt@SPB), which was found to be an effective catalyst for the reduction of *p*-nitrophenol with NaBH<sub>4</sub>. The present report described that the palladium nanoparticles (Pd@SPB) exhibited good activity for the Suzuki–Miyaura coupling reaction. This catalyst was recovered and reused for four times without any loss of catalytic activity. Heck reaction using the palladium nanoparticles (Pd@SPB) was also described.

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