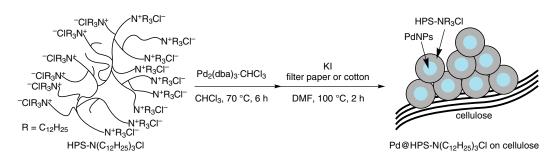
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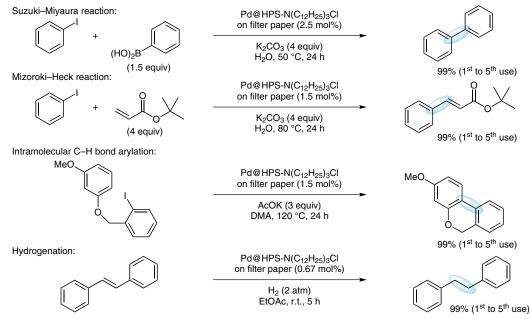
Adhesive Catalyst Immobilization of Palladium Nanoparticles on Cotton and Filter Paper: Applications to Reusable Catalysts for Sequential Catalytic Reactions

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## Adhesive Immobilization of Polymer-Stabilized Pd Nanoparticles on Cellulose



## Selected examples:



**Significance:** Adhesive immobilization of palladium nanoparticles on cellulose using hyperbranched polystyrene [Pd@HPS-N(C<sub>12</sub>H<sub>25</sub>)<sub>3</sub>Cl on cellulose] was developed. The catalyst promoted efficiently the Suzuki–Miyaura coupling, the Mizoroki–Heck reaction, the intramolecular C–H bond arylation, and the hydrogenation. The catalyst was recycled by a tweezers and reused several times.

**Comment:** The catalyst was prepared as follows: A reaction of the hyperbranched polystyrenes having tri(dodecyl)ammonium chloride moieties [HPS-N( $C_{12}H_{25}$ ) $_3$ Cl] with Pd $_2$ (dba) $_3$  was carried out to give the polymer-supported palladium nanoparticles Pd@HPS-N( $C_{12}H_{25}$ ) $_3$ Cl. The resulting nanocomposite Pd@HPS-N( $C_{12}H_{25}$ ) $_3$ Cl was treated with KI and filter paper (or cotton) as cellulose to afford Pd@HPS-N( $C_{12}H_{25}$ ) $_3$ Cl on cellulose.

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Category

Polymer-Supported Synthesis

## **Key words**

solid-supported catalysis

cellulose

hyperbranched polymers

ammonium salts

palladium



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