

## **Palladium nanoparticles immobilized on halloysite nanotubes covered by multilayer network for catalytic applications**

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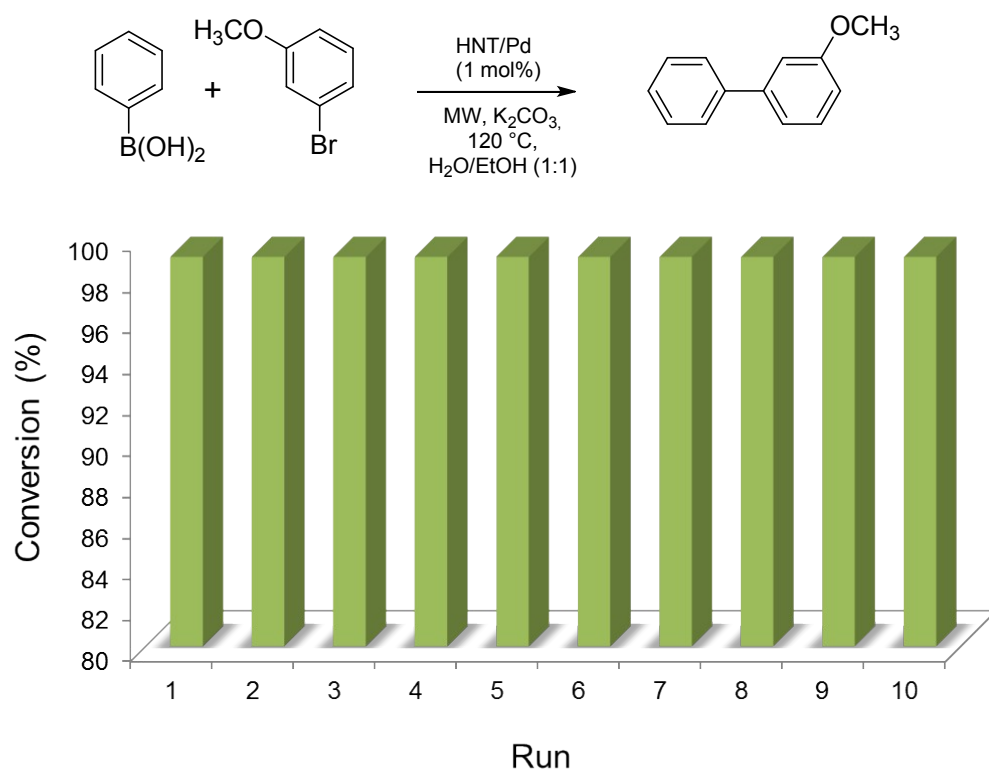
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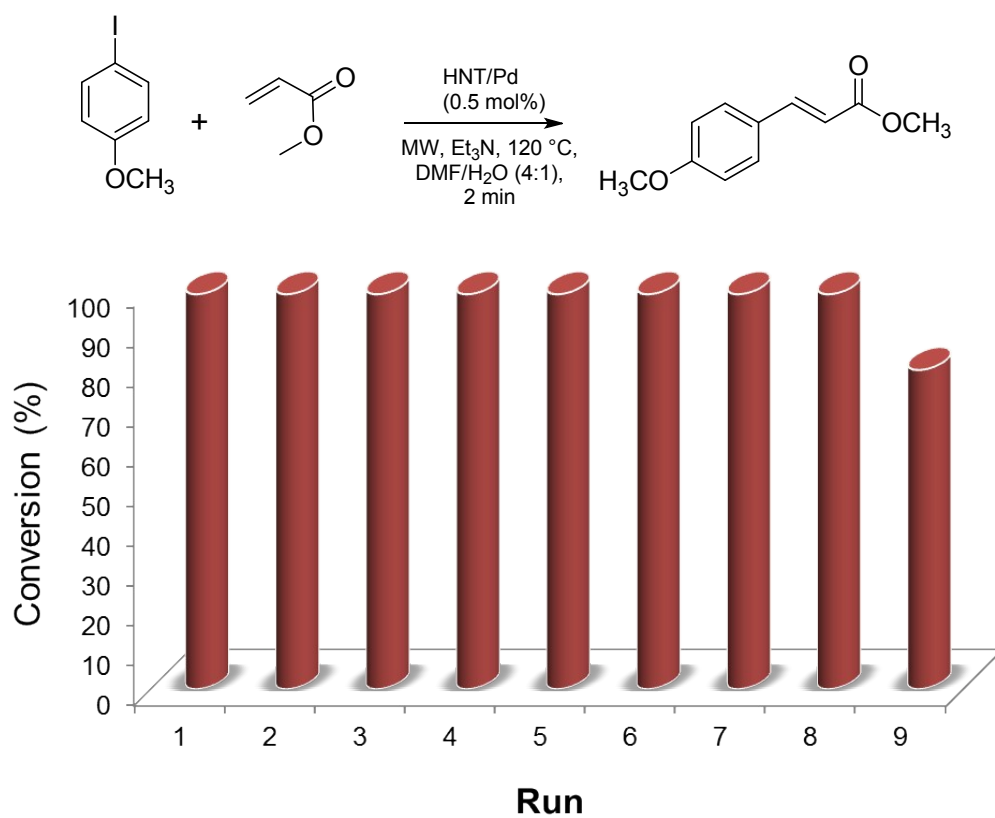
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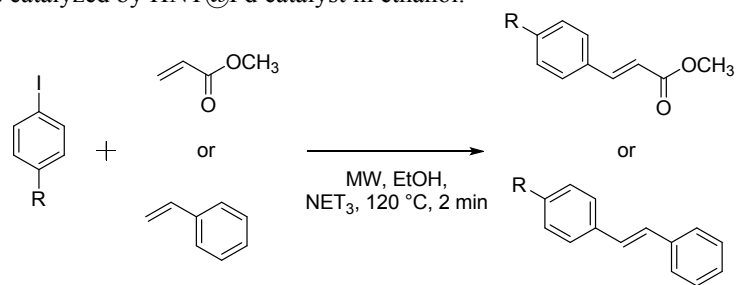


**Figure S1.** Recycling tests of HNT/Pd catalyst in the Suzuki reaction.



**Figure S2.** Recycling tests of HNT/Pd catalyst in the Suzuki reaction.

**Table S1.** Heck reactions catalyzed by HNT@Pd catalyst in ethanol.<sup>a</sup>



Entry	Product	Conversion (%) <sup>b</sup>
1		86
2		24
3		93
4		>99
5		42
6		trace
7		24
8		12

<sup>a</sup>Reaction conditions: aryl iodide (0.5 mmol), alkene (0.75 mmol), TEA (1 mmol), EtOH (1 mL) and catalyst (0.1 mol%). <sup>b</sup>Determined by <sup>1</sup>H-NMR.

# <sup>1</sup>H NMR spectra of pure known compounds of Heck and Suzuki reactions:

