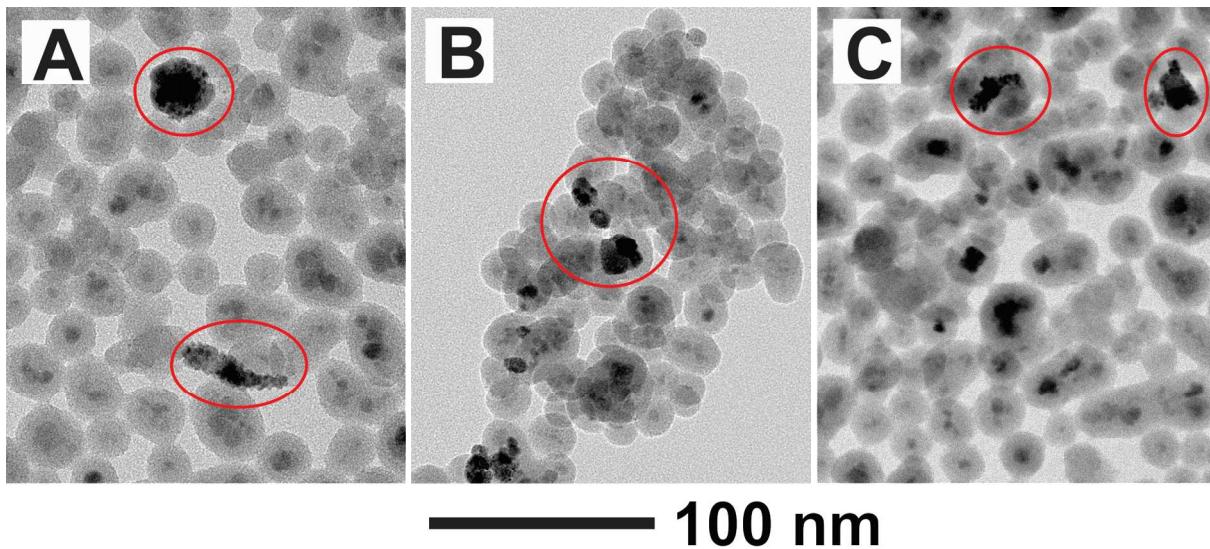


## SUPPORTING INFORMATION

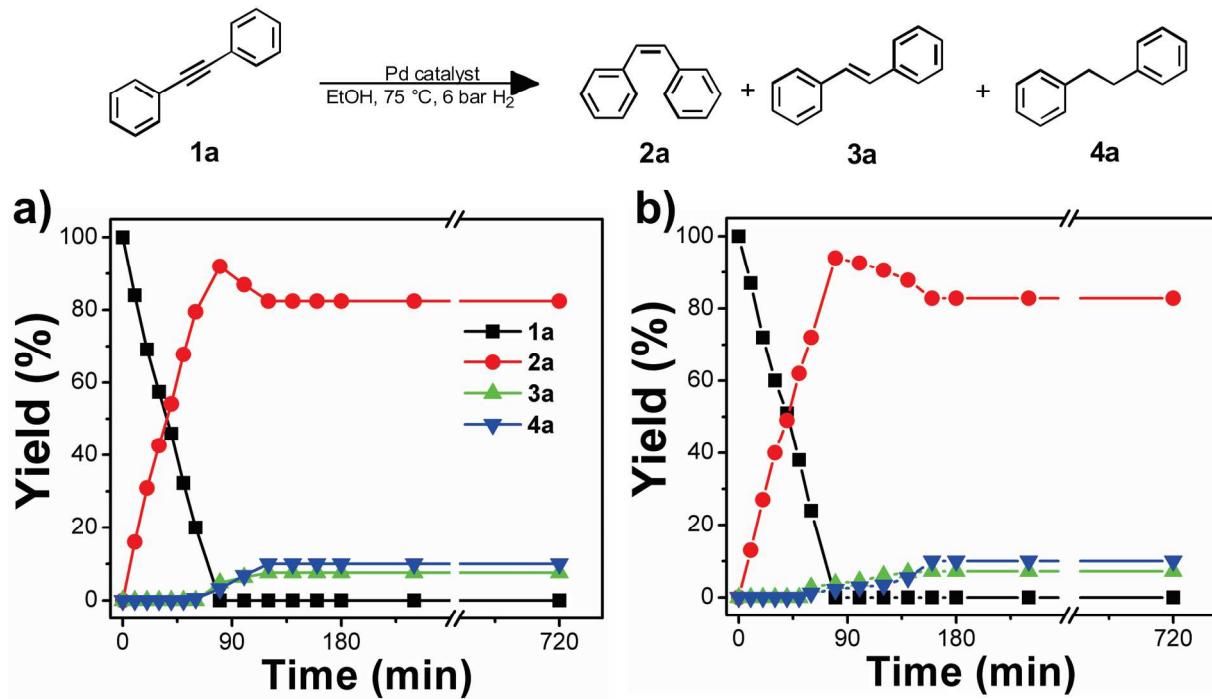
# Tuning the catalytic activity and selectivity of Pd nanoparticles using ligand-modified supports and surfaces

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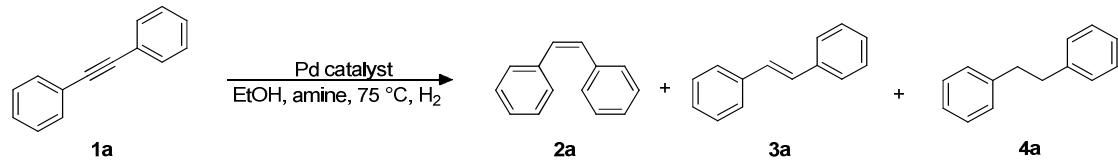


**Figure S1.** TEM image of the colloidal PVA-stabilized Pd NPs after thermal treatment supported on (a) FFSiNH<sub>2</sub>; (b) FFSien; (c) FFSiden.



**Figure S2.** Time-course study of the semihydrogenation diphenylacetylene catalyzed by: a) FFSienPd-TT with 76 mmol of ethylenediamine; and b) FFSidenPd-TT with 38 mmol of diethylenetriamine. Reaction conditions: Conditions: 7 mmol 1,2-diphenylacetylene, 50 mg supported catalyst (0.007 mmol Pd) (1000 mol substrate per mol catalyst), 75°C and 6 bar H<sub>2</sub>.

**Table S1.** Hydrogenation of diphenylacetylene with Pd catalysts in the presence of added amines as surface modifiers.<sup>a</sup>



Entry	Catalyst + Amine	Amine	Conversion	Yield of alkenes
		(mmol)	(%)	<b>2a</b> and <b>3a</b> (%) <sup>b</sup>
1		0.075	100	0
2		7.5	100	0
3	FFSienPd-TT + en	19	100	56
4		38	100	78
5		76	100	92
6 <sup>c</sup>		76	100	90
7		7.5	100	87
8 <sup>c</sup>	FFSidenPd-TT + den	7.5	100	80
9		38	100	95
10 <sup>c</sup>		38	100	90

<sup>a</sup> Reaction Conditions: 6 bar H<sub>2</sub>, 75°C, 7.0 mmol of diphenylacetylene, 50 mg supported catalyst (0.007 mmol Pd) (substrate/catalyst = 1000/1), 4 mL of ethanol, 1 h; <sup>b</sup>GC yield using internal standard technique (Remainder was alkane); <sup>c</sup>12 h.