Supplementary Materials: High Efficient Hydrogenation of Lignin-Derived Monophenols to Cyclohexanols over Pd/γ-Al_2O_3 under Mild Conditions

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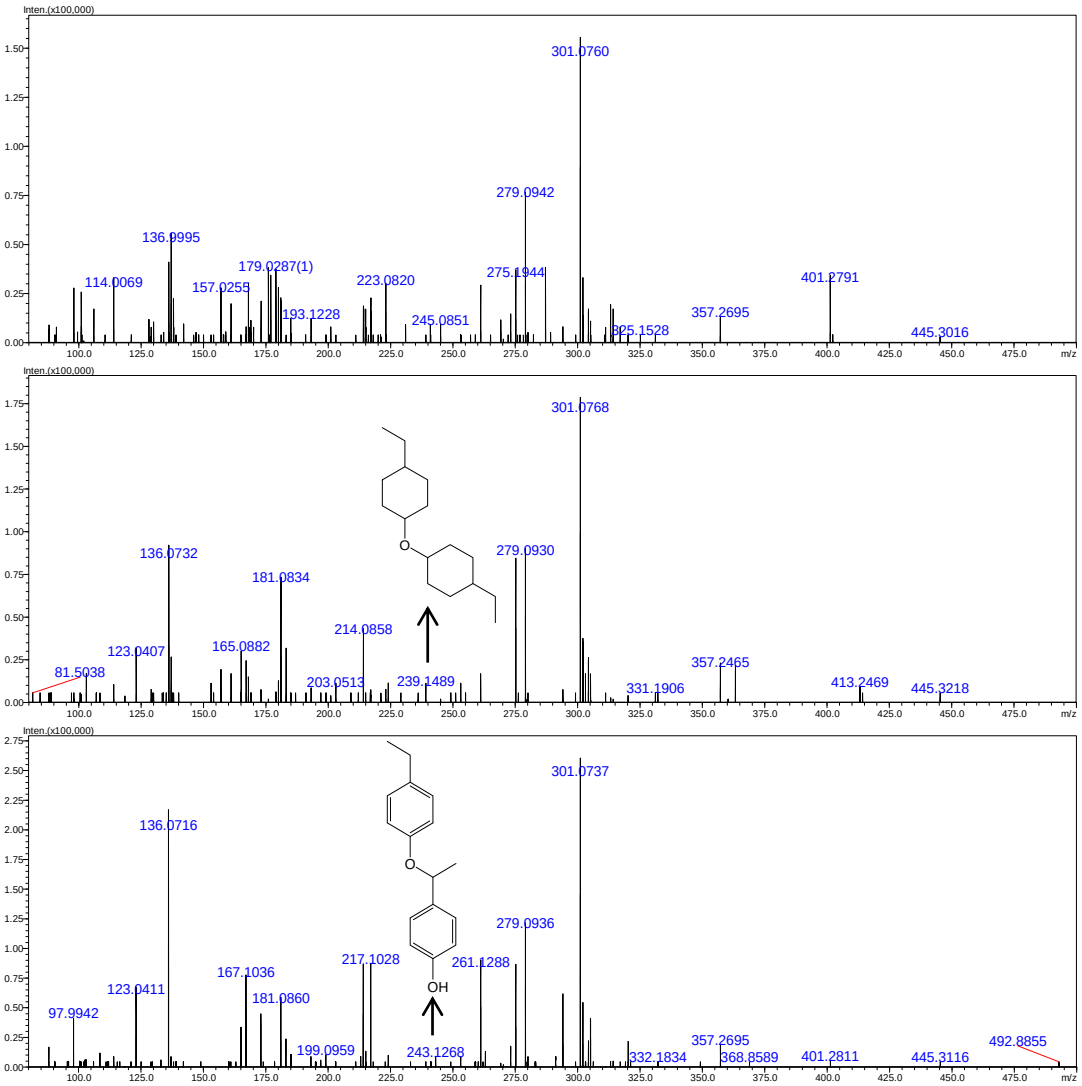

Figure S1. LC-MS analysis of liquid products at 80, 100, 120 °C. Reaction conditions: 25 mL H_2O, 0.82 mmol 4-ethyphenol, 0.20 g Pd/γ-Al_2O_3, 2 MPa H_2, 6 h.

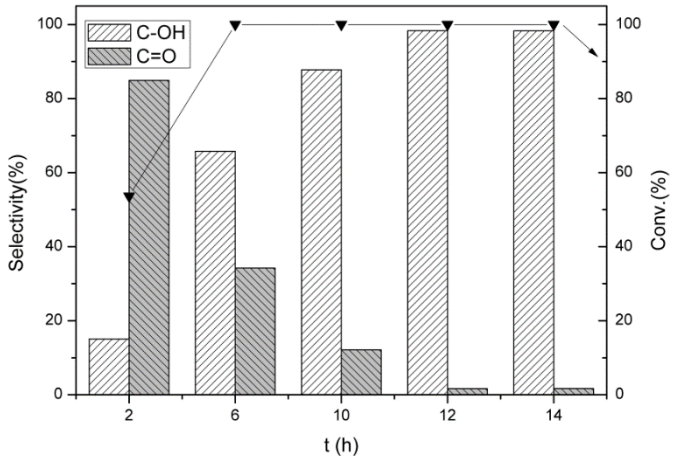

Figure S2. Effect of reaction time on the conversion of 4-ethylphenol and the selectivity to the products. Reaction conditions: 25 mL H_2O, 0.82 mmol 4-ethyphenol, 0.20 g Pd/γ-Al_2O_3, 2 MPa H_2, 6 h.

Table S1. Binding energies (eV) of core electrons and surface atomic composition of samples.

Samples	Pd $3d_{5/2}$				Pd $3d_{3/2}$			
	B.E. (eV) [a]	At%	B.E. (eV)	At%	B.E. (eV)	At%	B.E. (eV)	At%
UR-Pd/γ-Al_2O_3	335.1	14.2	336.8	85.8	340.3	14.2	342.2	85.8
Pd/γ-Al_2O_3	335.1	60.0	337.2	40.0	340.2	60.0	342.5	40.0

[a] The binding energy (B.E) values were corrected using the C1s peak at 284.6 eV.

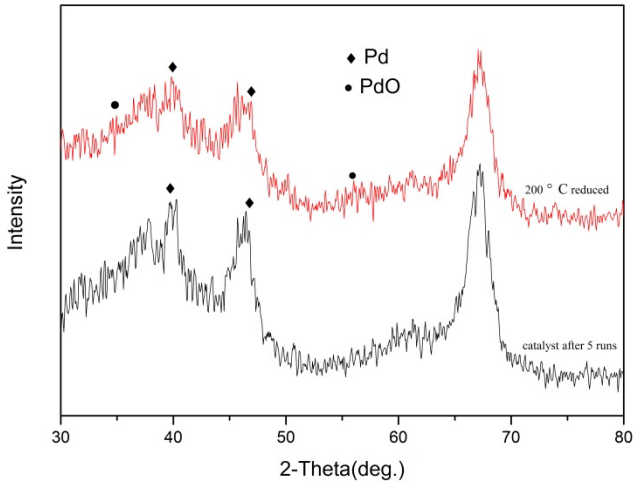

Figure S3. XRD patterns of the 200 °C reduced sample and catalyst after 5 runs.

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