

Supplementary Data

The reaction mechanism in highly effective hydrodechlorination of *p*-chlorophenol over Pd/CNTs catalyst

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Table S1. Compare study on the HDC rate constants achieved by the use of CNT as catalytic support with other supports and those previously reported in the literature

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Table S1 Compare study on the HDC rate constants achieved by the use of CNT as catalytic support with other supports and those previously reported in the literature

	Halide	Solvent	Catalysts	Product	HDC rate (min ⁻¹)	Reference
1	4-CP	H ₂ O	5% Pd/CNTs	phenol	27.6	a
2	4-CP	H ₂ O	5% Pd/AC	phenol	20.7	a
3	4-CP	H ₂ O	5% Pd/ γ -Al ₂ O ₃	phenol	16.6	a
4	4-CP	H ₂ O	5% Pd/graphene	phenol	8.3	a
5	4-CP	H ₂ O	1% Pd/CNTs	phenol	34.5	a
6	4-CP	H ₂ O	1% Pd/AC	phenol	18.4	a
7	4-CP	50% H ₂ O	Pd/CNTs	phenol	19.92	a
8	4-CP	H ₂ O	Pd/AC	phenol	8.55	[R1]
9	4-CP	H ₂ O	Pd/RGO	phenol	1.01	[R2]
10	4-CP	H ₂ O	Pd/AC	phenol	0.05	[R2]
11	4-CP	H ₂ O	Pt/pillared clays	phenol	0.76	[R3]
12	4-CP	H ₂ O	Pd/pillared clays	phenol	7.56	[R3]
13	4-CP	H ₂ O	Rh/pillared clays	phenol	6.25	[R3]
14	4-CP	H ₂ O	Pd-In/ γ -Al ₂ O ₃	phenol	2.07	[R4]
15	4-CP	H ₂ O	Pd-Cu/ γ -Al ₂ O ₃	phenol	1.84	[R5]

a: HDC rate (min⁻¹) means the initial activity of the catalysts which were obtained by the experiment at the conversion of 4-CP below 25%. 1, 2, 5, 6 were the results of this article.

$$HDC \text{ rate (min}^{-1}\text{)} = \frac{n_0 \times \text{Conversion}}{n_{Pd} \times \text{Time}}$$

where n_0 (mmol) was the initial molar of the reaction substrate, n_{Pd} (mmol) was the molar of Pd existed in the catalysts.

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