Supporting Information

Synergism of Pt single atoms, clusters and nanoparticles on carbon doping with nitrogen for nitroaromatics highly efficient and selective hydrogenation

Yu Fang [a, 1], Qingqing Liu [a, 1], Min Tian [b, 1], Luna Ruan [a, 1], Kai Chen [a], Huan Zhang [a], Zhiqing Yang [b, *], Hengqiang Ye [b], Lihua Zhu [a, *]

[a] Jiangxi Province Key Laboratory of Functional Crystalline Materials Chemistry, College of Chemistry and Chemical Engineering, Jiangxi University of Science and Technology, Ganzhou 341000, Jiangxi, China.

[b] Ji Hua Laboratory, Foshan 528200, PR China

[1] These authors contributed equally to this work.

Corresponding authors.

E-mail addresses: yangzq34@163.com (Zhiqing Yang); zhulihua@jxust.edu.cn (Lihua Zhu)

Table S1. Specific surface area, pore volume and average pore size of different samples.

Catalyst	BET surface area ($m^2 \cdot g^{-1}$)	Average pore diameter (nm)	Total pore volume ($cm^3 \cdot g^{-1}$)
NC	1515.9	2.44	74.3
1.08%Pt/NC	1426.2	2.24	70.9

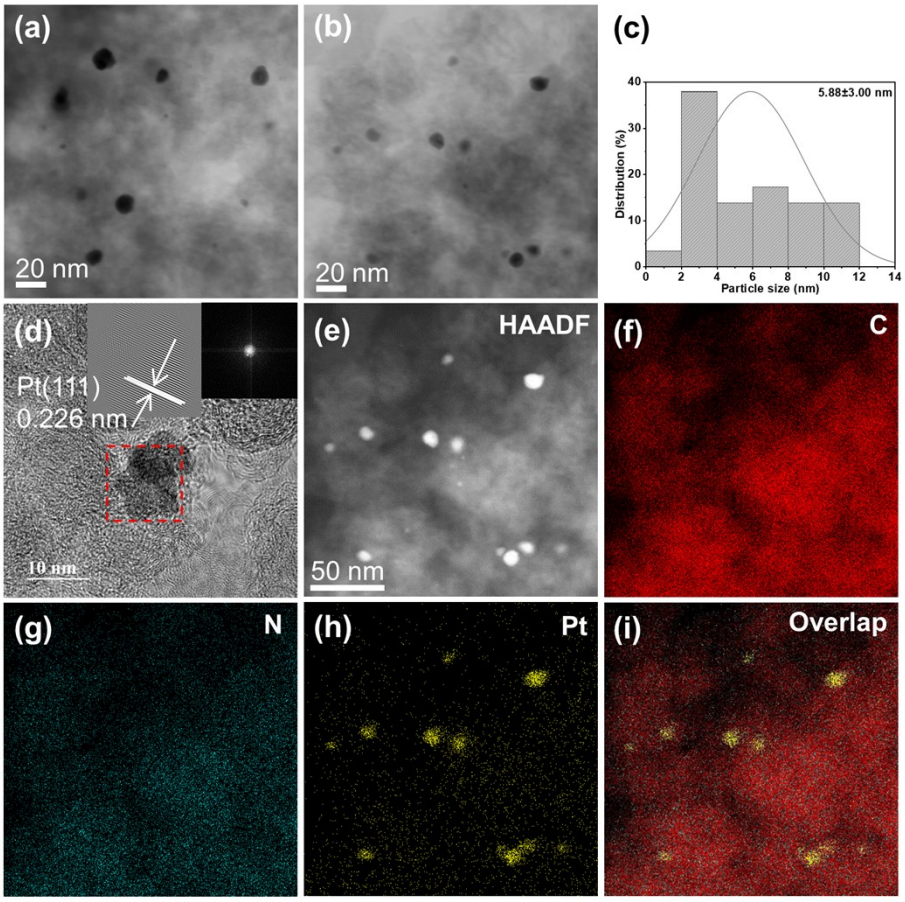

Fig. S1. (a, b) TEM images, (c) particle size distribution of 1.08% Pt/NC, (d) HRTEM image, (e) HADDF-STEM image, (f-i) STEM-EDS elemental mapping of 1.08% Pt/NC (red: C, blue: N, yellow: Pt, elements overlaid).

Table S2. The catalytic performance of the reported catalysts for nitrobenzene hydrogenation in the literature.

Ref.[a]	Catalyst	Substrate	Solvent	T (°C)	Time (h)	H_2 Pressure (MPa)	TOF (h^{-1})	S[b] (%)	Y[c] (%)
[1]	Co_1@NC-(SBA)	nitrobenzene	ethanol	90	1.5	1.0	-	99%	99%
[2]	Ru@C_{60}	nitrobenzene	isopropanol	80	6	3.0	37	100%	100%
[3]	Pt/H-NCNTs	nitrobenzene	ethylbenzene	40	0.33	0.5	11358	99%	97%
[4]	Pd/MIL-101	nitrobenzene	DMF	120	6	0.6	-	>99.9%	>99.9%
[5]	Co/NC-0.30	nitrobenzene	ethanol	70	4	3.0	-	>99%	>99%
[6]	2.5%Pd/CeO_2	nitrobenzene	solvent-free	40	3	6.0	11411	100%	100%
[7]	Pd-6Ni-N-C_{60}	nitrobenzene	ethanol	80	0.33	1.0	-	99.8%	98.5%
[8]	Pt/$Ti_3C_2T_x$-D-AB	nitrobenzene	ethanol/water	30	1	1.0	-	100%	99.2%
[9]	Pd@P(QP-TVP)	nitrobenzene	H_2O	40	1	1.0	-	100%	98.6%
[10]	Pd@HTMC	nitrobenzene	H_2O	50	1	0.1	-	100%	100%
[11]	Co@NMC-800	nitrobenzene	ethanol	80	1.33	1.0	364.9	>99%	>98%
[12]	Fe_2O_3@G-C-900	nitrobenzene	ethanol	70	2	2.0	-	99.1%	94.5%
[13]	Ni@C-650	nitrobenzene	ethanol	140	0.66	0.5	-	98.7%	97.7%
This work	1.08% Pt/NC	nitrobenzene	ethanol	30	0.05	1.0	74191.8	97.7%	98.9%

[a] Reference; [b] Selectivity to the target product of only -NO_2 group hydrogenation; [c] Yield to the target product of only -NO_2 group hydrogenation.

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