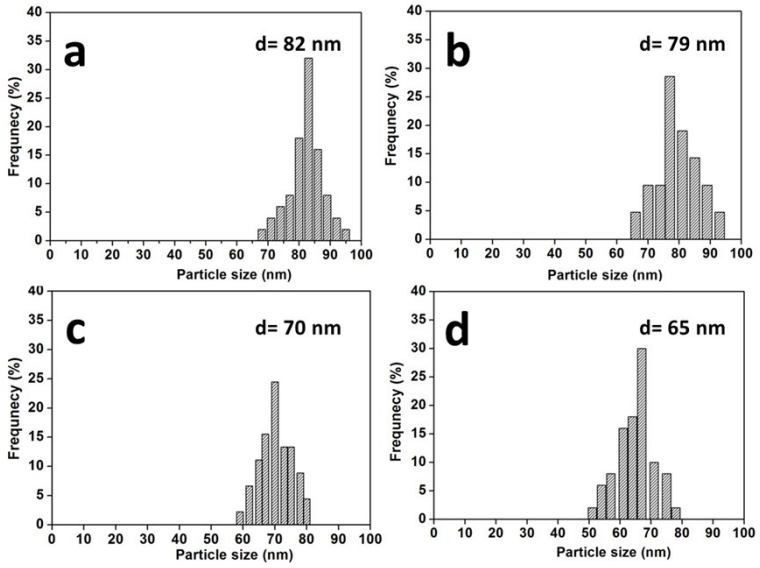

Fig. S1 Histograms showing the particle size distributions of nanoporous (a) $Pd_{21}@Pt_{79}$, (b) $Pd_{27}@Pt_{73}$, (c) $Pd_{38}@Pt_{62}$, and (d) $Pd_{55}@Pt_{45}$ particles.

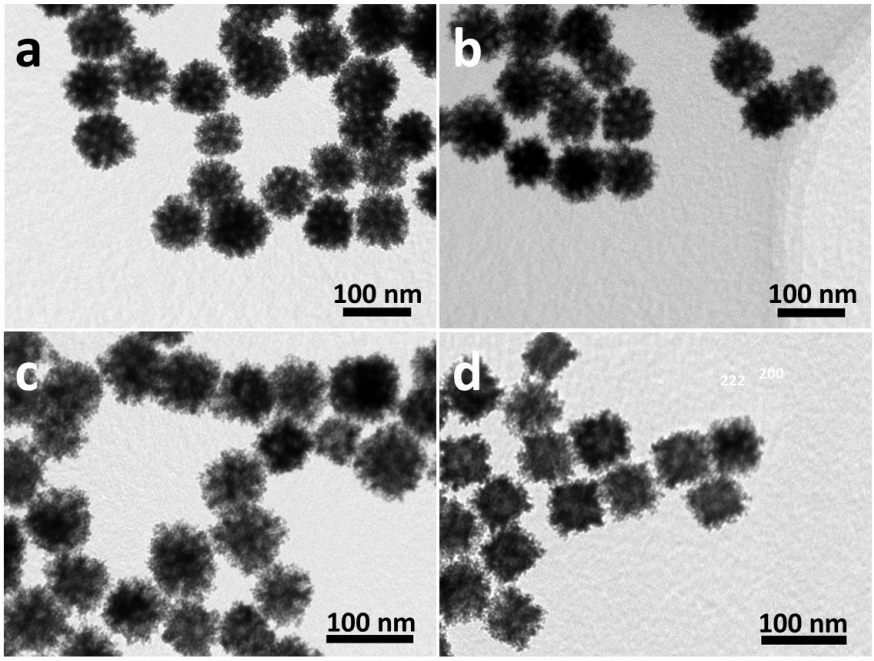

Fig. S2 TEM images of the nanoporous (a) $Pd_{21}@Pt_{79}$, (b) $Pd_{27}@Pt_{73}$, (c) $Pd_{38}@Pt_{62}$, and (d) $Pd_{55}@Pt_{45}$ particles.

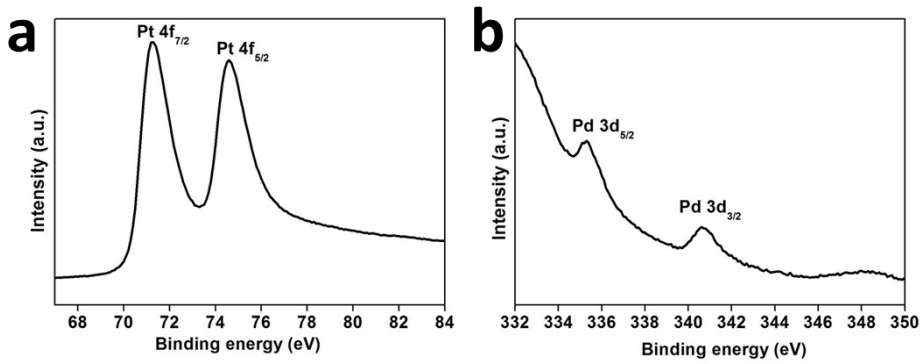

Fig. S3 High resolution XPS spectra of nanoporous $Pd_{27}@Pt_{73}$ particles on (a) Pt 4*f* and (b) Pd 3*d*.

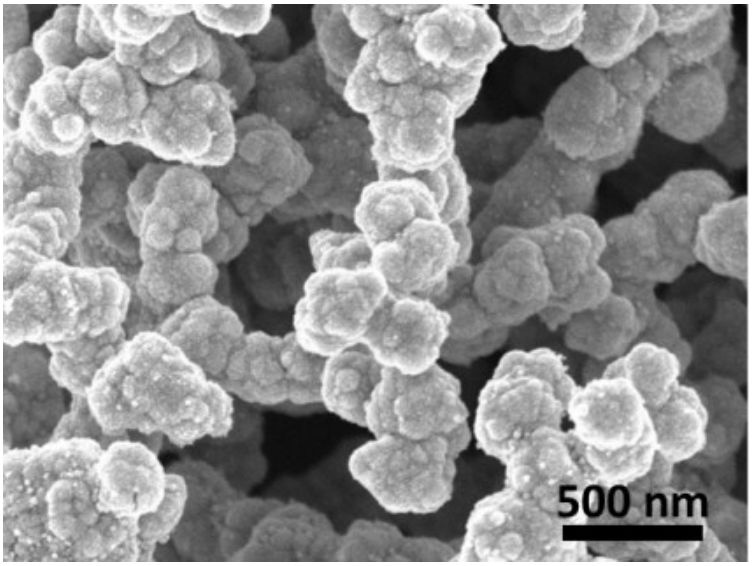

Fig. S4 SEM image of the sample prepared in the absence of F127.

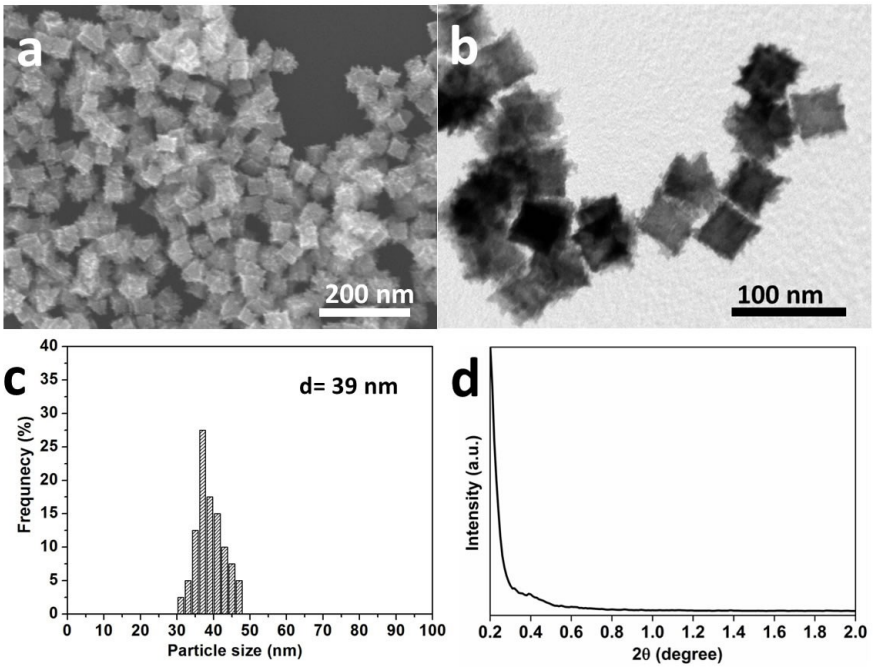

Fig. S5 (a) SEM image, (b) TEM image, (c) histogram of particle size distribution, and (d) low-angle pattern of $Pd_{73}@Pt_{27}$ particles prepared at a molar ratio of Pd/Pt=67/33. Inset image in the panel (b) shows SAED pattern of the individual particle.

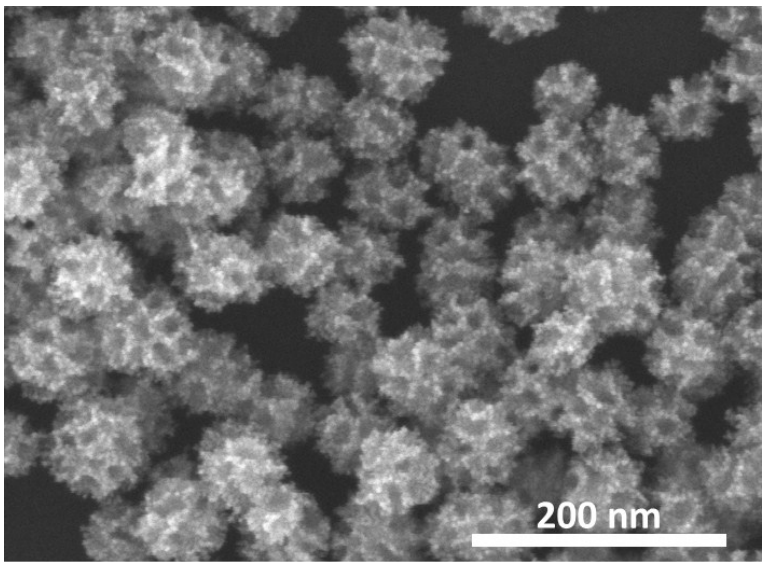

Fig. S6 SEM image of nanoporous Pt particles prepared in the absence of Pd precursor.

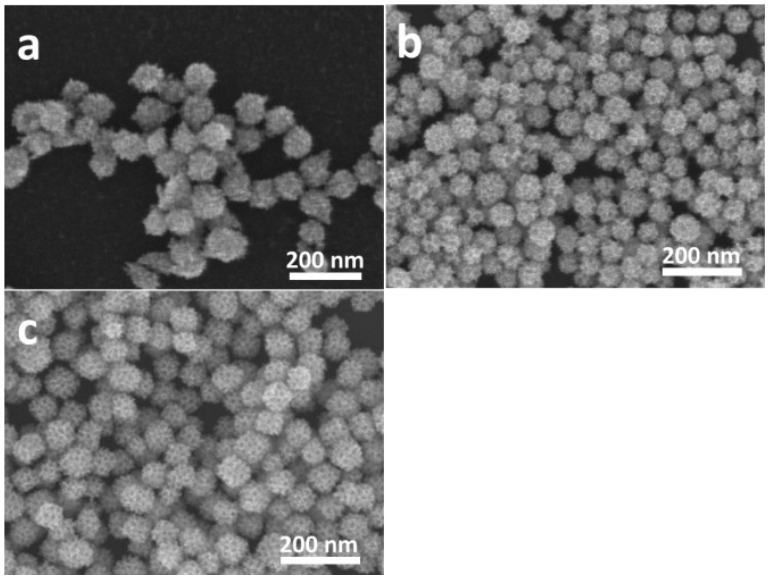

Fig. S7 SEM images of $Pd_{27}@Pt_{73}$ particles prepared by different amount of KBr ((a) 0 mg, (b) 100 mg, and (c) 300 mg).

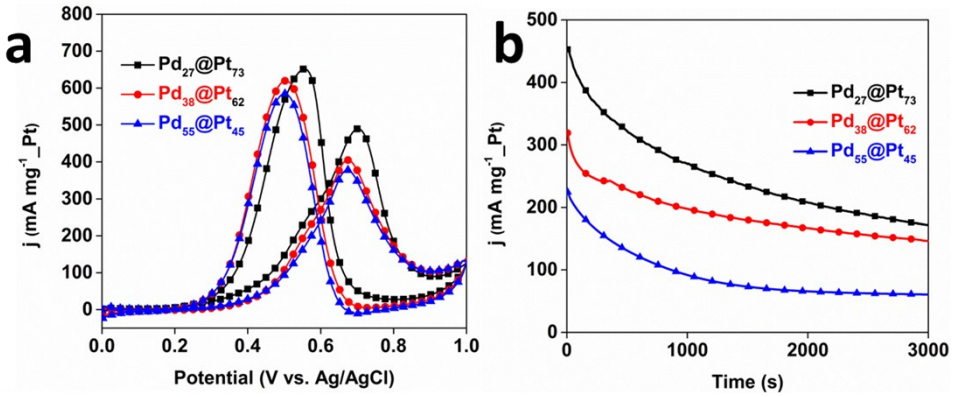

Fig. S8 (a) Cyclic voltammograms and (b) chronoamperometric curves (recorded at 0.6 V) of the nanoporous $Pd_{27}@Pt_{73}$, $Pd_{38}@Pt_{62}$, $Pd_{55}@Pt_{45}$ particles obtained in 0.5 M H_2SO_4+0.5 M CH_3OH.

Table S1. Comparsion of the activity of nanoporous $Pd_{27}@Pt_{73}$ particles with previous reported Pt-based catalysts.

Sample names	Electrolytes	Scan rate ($mV\ s^{-1}$)	Mass activity ($mA\ mg^{-1}\_Pt$)	Reference
Nanoporous $Pd_{27}@Pt_{73}$ particles	0.5 M H_2SO_4+0.5 M CH_3OH	50	490	Present work
Dendritic Au@Pt nanoparticles	0.5 M H_2SO_4+0.5 M CH_3OH	50	120	[S1]
Ag@Pt nanoparticles	0.5 M H_2SO_4+0.5 M CH_3OH	50	150	[S2]
Pd@Pt nanparticles	0.5 M H_2SO_4+0.5 M CH_3OH	50	376	[S3]
Pd@Pt nanoparticles	0.1 M $HClO_4$+0.5 M CH_3OH	50	*ca.* 350	[S4]
Nanoflower Pt_3Co	0.1 M $HClO_4$+1.0 M CH_3OH	50	385.1	[S5]
PdPt alloy nanoparticles/Graphite	0.5 M H_2SO_4+1.0 M CH_3OH	20	460.2	[S6]
Octahedra PtAg alloy	0.5 M H_2SO_4+1.0 M CH_3OH	50	*ca.* 350	[S7]
Hollow Pd@Pt nanoparticles	0.5 M H_2SO_4+1.0 M CH_3OH	50	500	[S8]
TeCuPt nanowires	0.5 M H_2SO_4+1.0 M CH_3OH	20	245	[S9]
Pt_1Ni_1 chain-like nanohybrids	0.5 M H_2SO_4+1.0 M CH_3OH	50	136	[S10]
Hollow Pd@Pt nanoparticles	0.5 M H_2SO_4+1.0 M CH_3OH	50	580	[S11]
Au@Pd@Pt nanoparticles	0.5 M H_2SO_4+1.0 M CH_3OH	50	430	[S12]

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