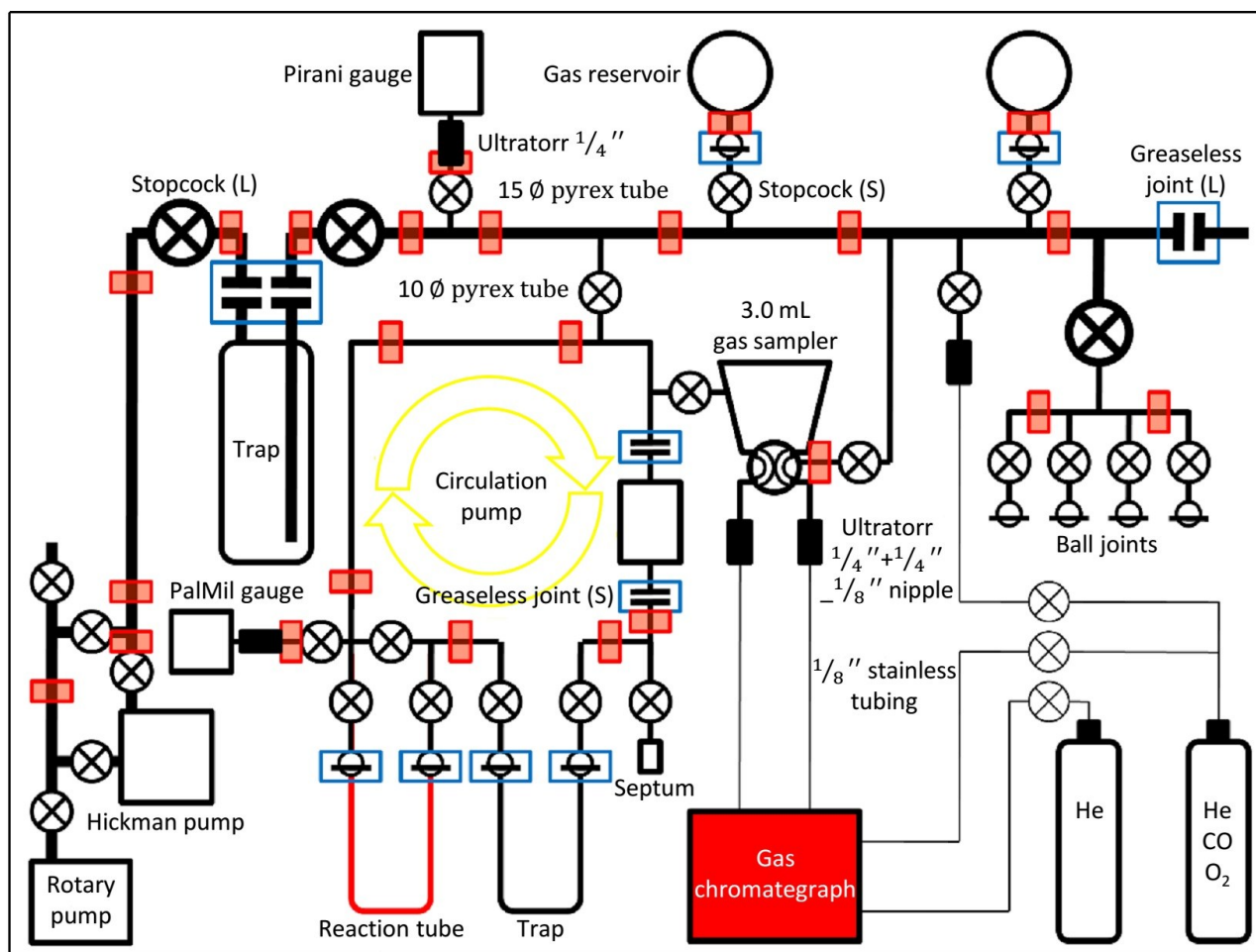


Supporting Information

Scheme S1



Scheme S1. An illustration of gas-circulation line for catalytic CO oxidation.

Figure S1

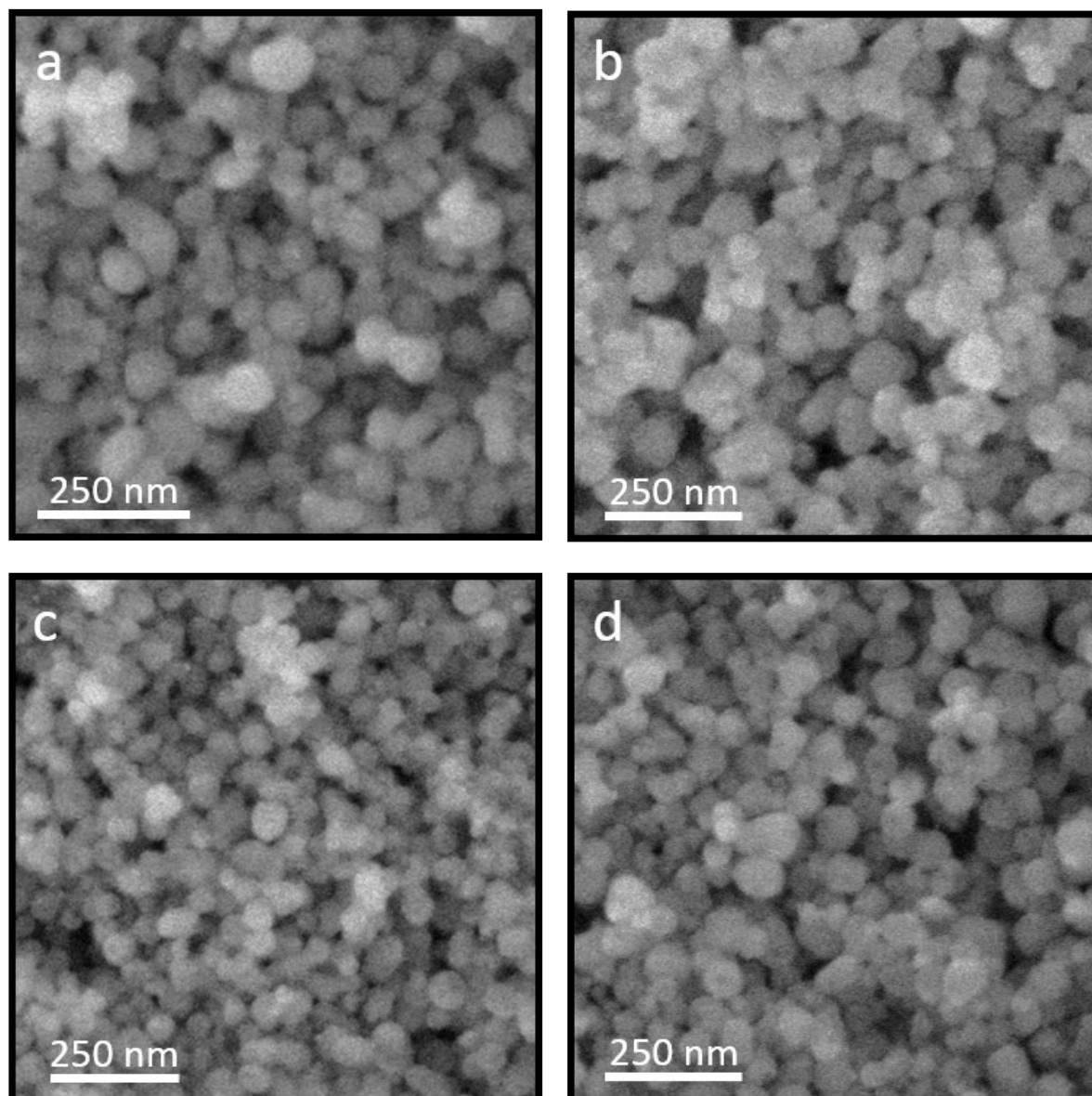


Figure S1. SEM images of (a) HMS/Pt_5_A, (b) HMS/Pt_5_N, (c) HMS/Pt_10_A, and (d) HMS/Pt_10_N.

Figure S2

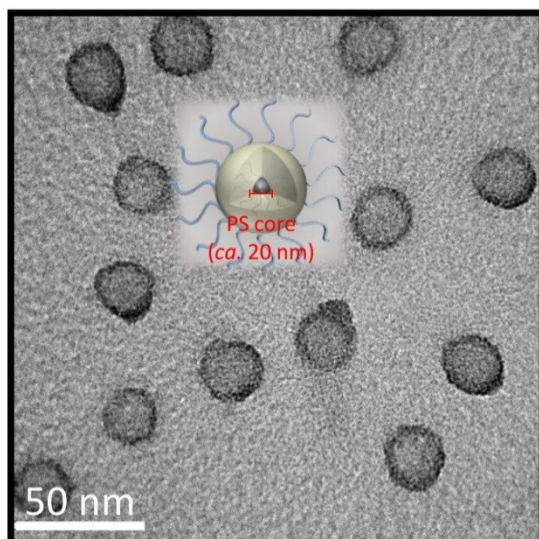


Figure S2. TEM image of PS-*b*-P2VP-*b*-PEO micelles. PS core is highlighted by 0.1 wt% phosphotungstic acid.

Table S1. Summary on surface areas, total pore volumes, average pore sizes, and Pt loading amounts for HMS, HMS/Pt_5_A, HMS/Pt_5_N, HMS/Pt_10_A, and HMS/Pt_10_N. Two examples of the related materials prepared with the same cationic surfactant are also shown for comparison.

Sample name	Surface area (m ² /g)	Total pore volume (cm ³ /g)	Pore size (nm)	ICP-Pt %
HMS	1,160	-	2.50	-
HMS/Pt_5_A	1,006	1.92	2.30	1.4
HMS/Pt_5_N	1,043	1.82	2.03	1.3
HMS/Pt_10_A	857	1.57	2.30	2.6
HMS/Pt_10_N	788	1.62	1.86	3.0
^a Au-nanocube@mSiO ₂	303	-	2.6	
^b Fe ₂ O ₃ @dual-mSiO ₂	1154	1.21	2.1	

^a *Chem. Mater.*, 2013, 25, 3030–3037; ^b *J. Am. Chem. Soc.*, 2010, 132, 15144–15147.

Figure S3

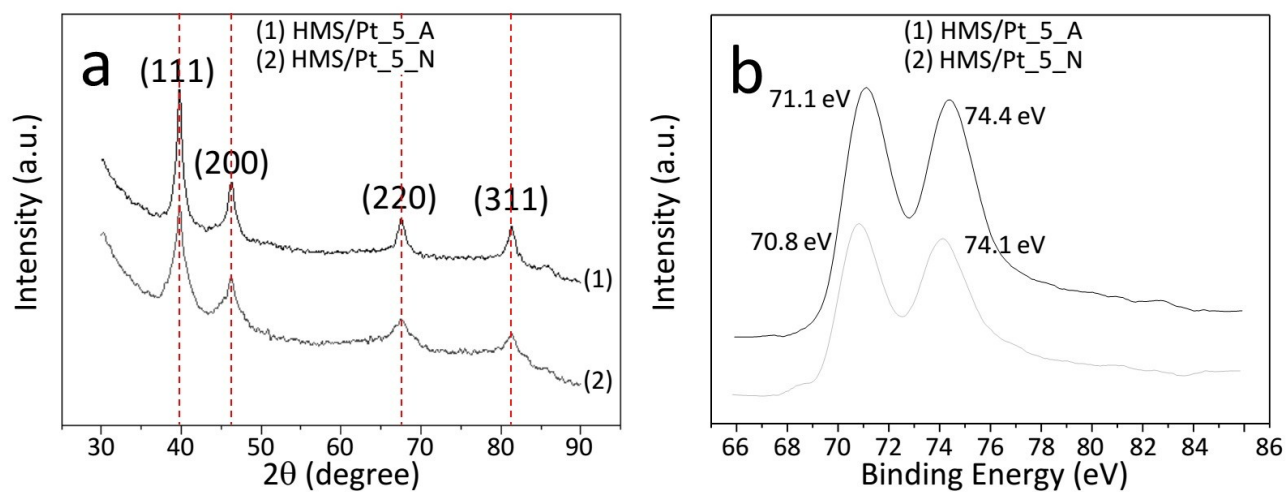


Figure S3. (a) Wide angle XRD profile and (b) XPS spectra of HMS/Pt_5_A and HMS/Pt_5_N.

Table S2. Literature values for the binding energy (eV) of Pt 4f_{7/2}, Pt 4f_{5/2}.

Sample	Pt 4f _{7/2} (eV)	Pt 4f _{5/2} (eV)	Reference
Pure Pt	71.2	74.5	[S1]
PtO	72.3	-	[S2]
Pt-Pd Nanodendrites Pt ⁰	71.4	74.7	[S3]
Pt-Pd Nanodendrites Pt ^{II}	72.9	77.3	[S3]
Pt-Pd Alloy NPs Pt ⁰	71.4	74.8	[S4]
Pt-Pd Alloy NPs Pt ^{II}	73.5	76.6	[S4]

[S1] *Handbook of X-ray Photoelectron Spectroscopy*, Physical Electronics, Eden Prairie, 1995; [S2] *Surf. Sci.*, 2003, 545, 19-33; [S3] *J. Mater. Chem. A*, 2014, 2, 4384-4390; [S4] *Nanotechnology*, 2012, 23, 385602.

Figure S4

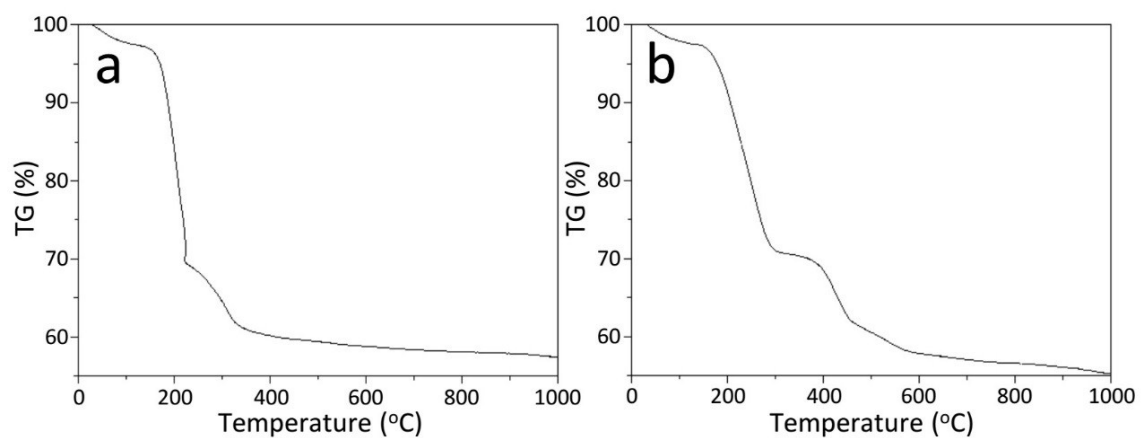


Figure S4. TG curves of as-prepared samples treated under (a) air and (b) nitrogen, respectively.