Electronic Supplementary Material (ESI) for Nanoscale.

Electronic Supplementary Information

Surface engineering on CeO_2 nanorods by chemical redox etching and their enhanced catalytic activity for CO oxidation

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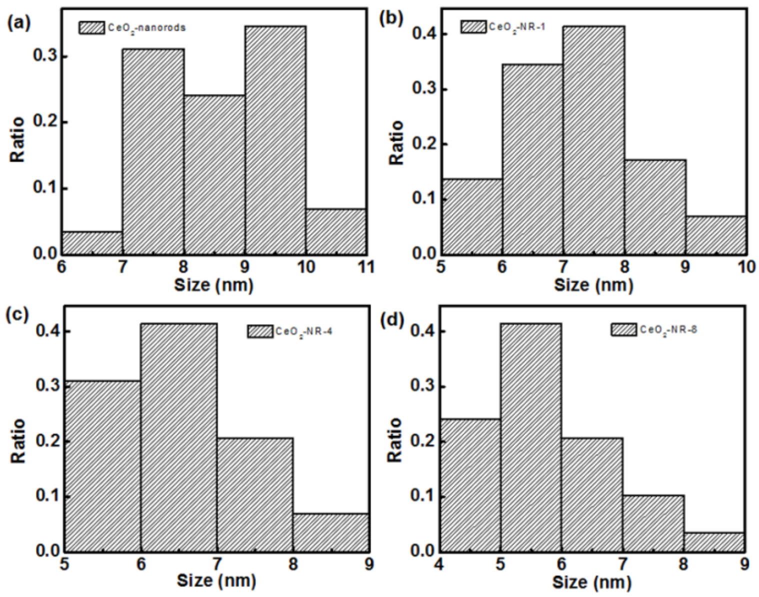

Figure S1 Diameter distributions of (a) CeO_2 nanorods (8.5 ± 1.0 nm); (b) CeO_2-NR-1 (7.4 ± 1.1 nm); (c) CeO_2-NR-4 (6.5 ± 1.0 nm) and (d) CeO_2-NR-8 (5.8 ± 1.1 nm).

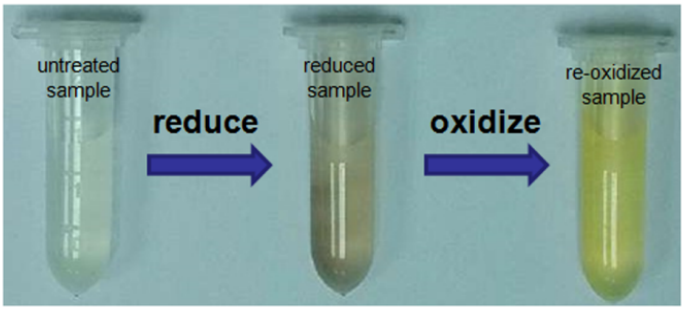

Figure S2 Optical images of CeO_2: the untreated nanorods, AA reduced samples and H_2O_2 re-oxidized samples.

Table S1 Catalytic performance of as-synthesized ceria nanorods and etched ceria nanorods for CO oxidation

	CeO_2 nanorods	CeO_2 NRs-1	CeO_2 NRs-4	CeO_2 NRs-8
T_{50}/ ºC	230	218	213	198
T_{90}/ ºC	292	282	267	247
T_{99}/ ºC	327	325	308	286

Preparation of ceria nanopaticles

Ceria nanoparticles were prepared in a simple calcining method. Briefly, 500 mg $Ce(NO_3)_3 \cdot 6H_2O$ were calcined at a muffle furnace at 500 °C for 2h and the temperature ramping rate was 10 °C/min. After cooling to the room temperature, the ceria nanoparticles were obtained.

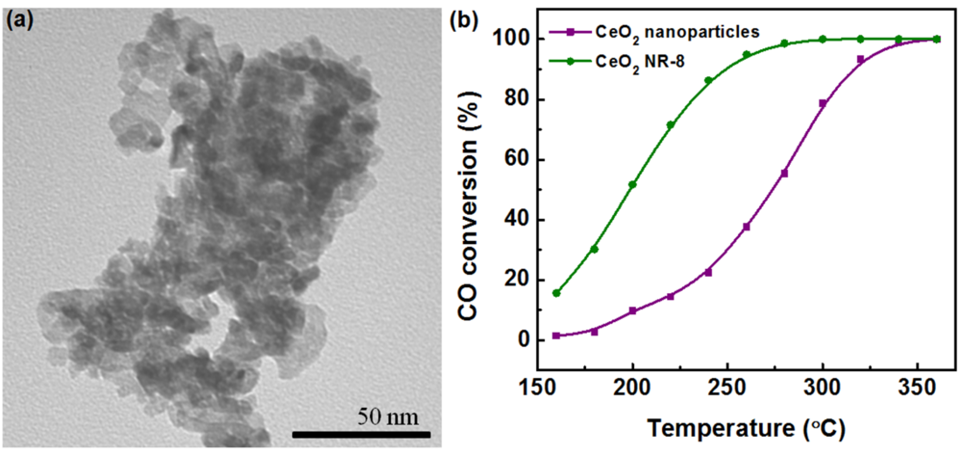

Figure S3 (a) Typical TEM image of ceria nanoparticles, (b) CO oxidation property of ceria nanoparticles and CeO_2-NR-8.

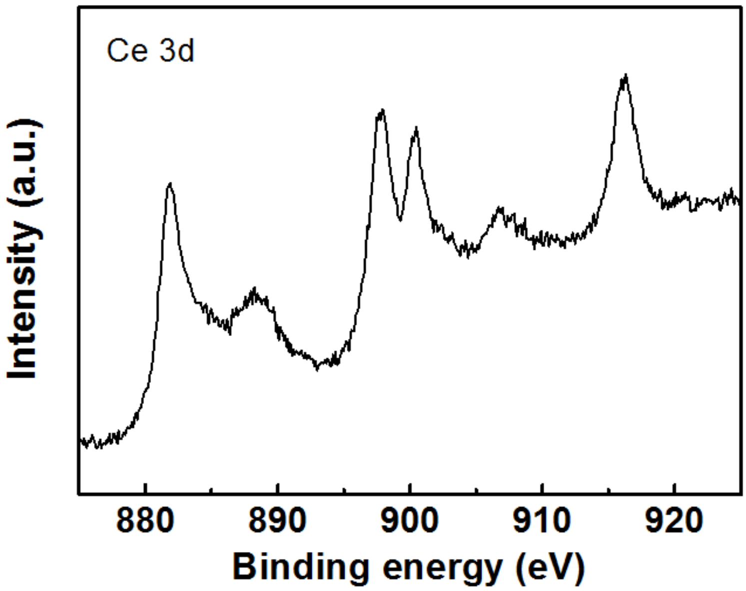

Figure S4 (a) XPS spectra of the Ce *3d* core level of ceria nanoparticles.