Electronic Supplementary Material

An etching-assisted route for fast and large-scale fabrication of non-layered palladium nanosheets

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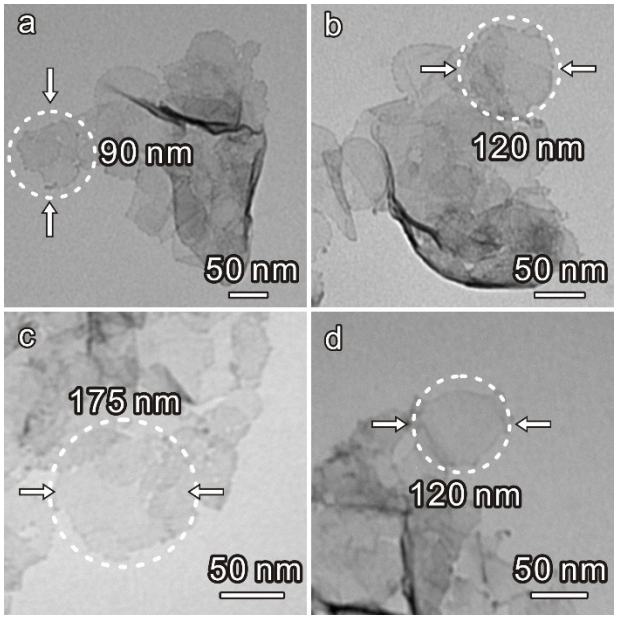

Figure S1. TEM images of the obtained Pd nanosheets.

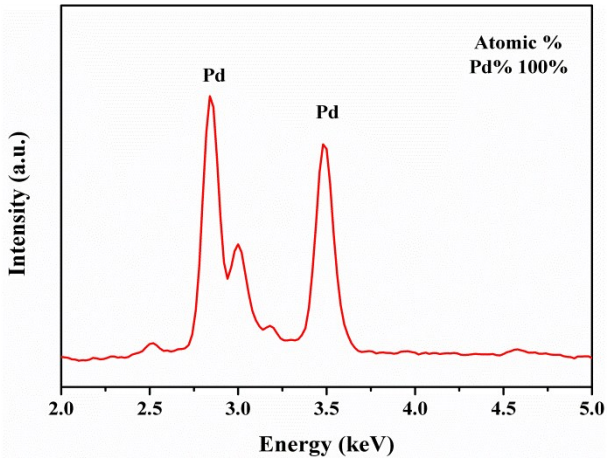

Figure S2. EDX pattern of the obtained non-layered Pd NSs.

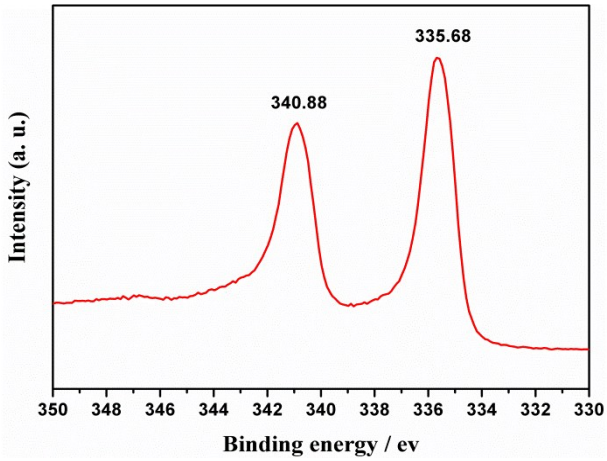

Figure S3. X-ray photoelectron spectroscopy of the obtained non-layered Pd NSs.

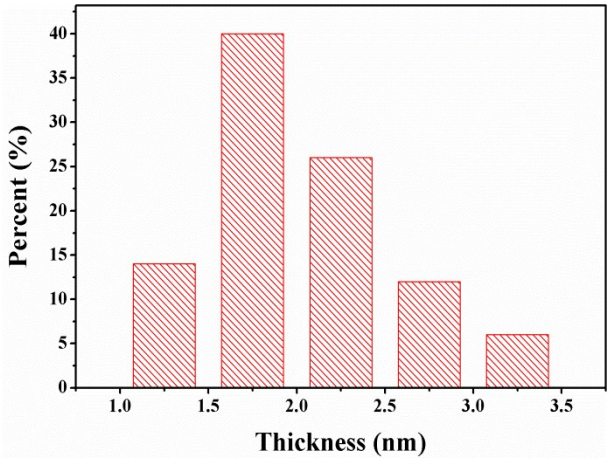

Figure S4. Thickness distribution of the obtained non-layered Pd NSs.

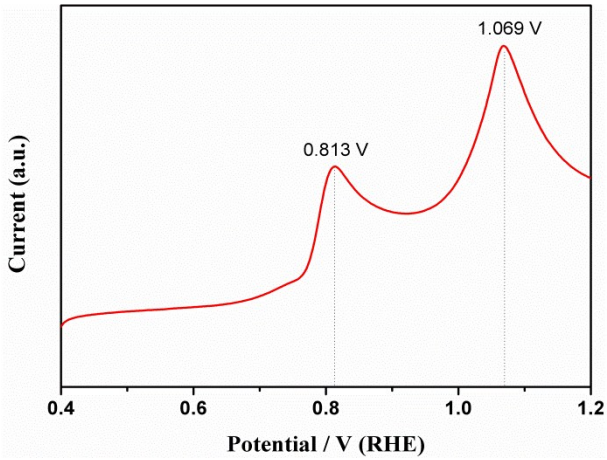

Figure S5. CO striping experiment of the fresh non-layered Pd NSs conducted in 0.1 M H_2SO_4 solution at a scan rate of 2 mV s^{-1}.

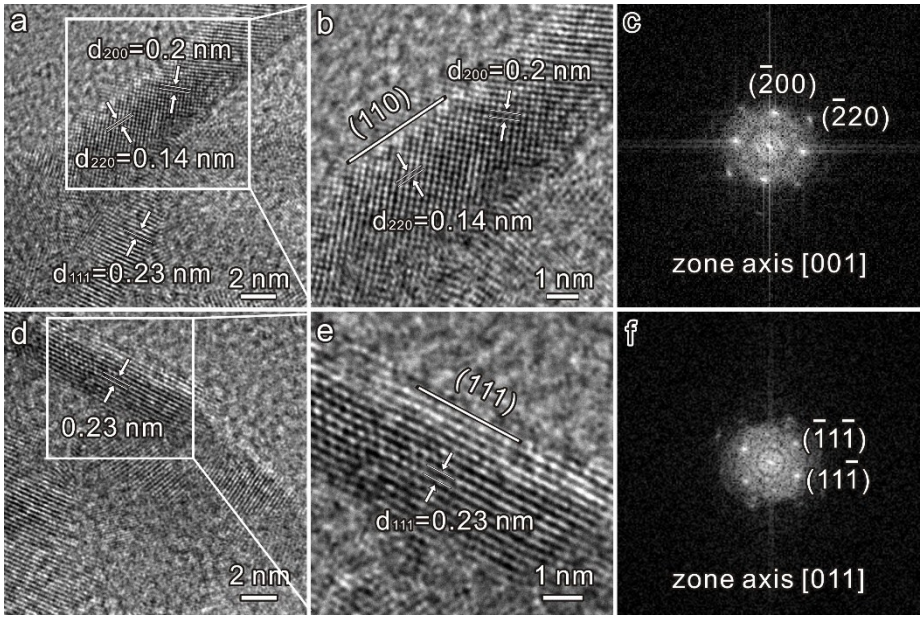

Figure S6. HRTEM images and the corresponding FFT patterns of the obtained Pd NSs.

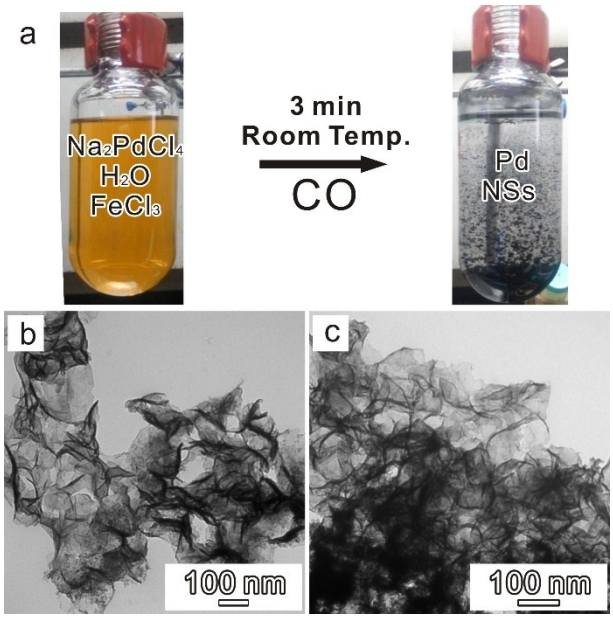

Figure S7. (a) Photographs of the reaction flask before and after the formation of non-layered Pd NSs, and (b, c) the corresponding TEM images of the obtained Pd NSs.

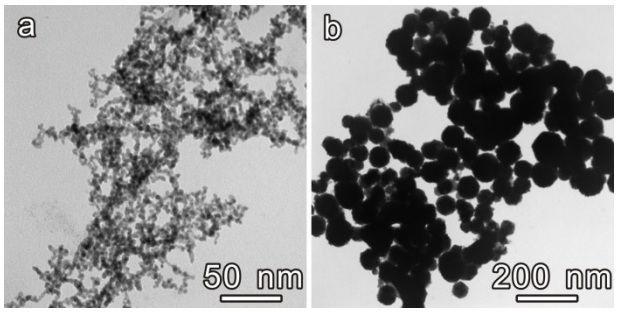

Figure S8. TEM images of the products obtained while CO was substituted by $NaBH_4$ (a) and ascorbic acid (b).

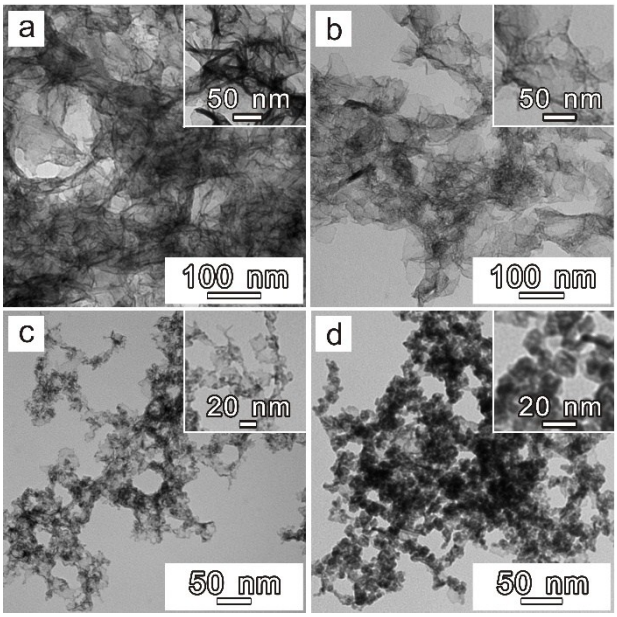

Figure S9. TEM images of the products obtained under the standard condition except the different amount of $FeCl_3$: (a) 0.5 mg, (b) 0.3 mg, (c) 0.1 mg, (d) without $FeCl_3$.

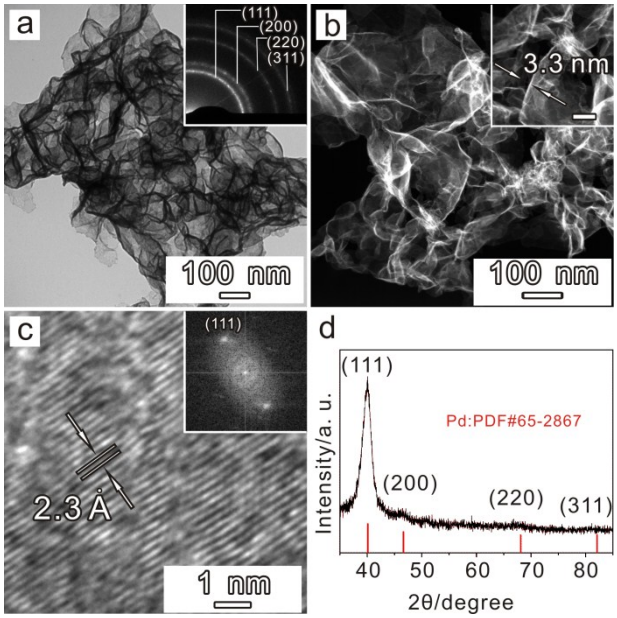

Figure S10. Morphological and structural characterizations of non-layered Pd NSs with KI served as the etchant. (a) TEM image, (b) HAADF-STEM image, the scale bar in the inset TEM images is 50 nm, (c) HRTEM image, and (d) XRD pattern. The inset in (a) shows the SAED pattern of non-layered Pd NSs and in (c) shows the corresponding FTT pattern of the individual NS.

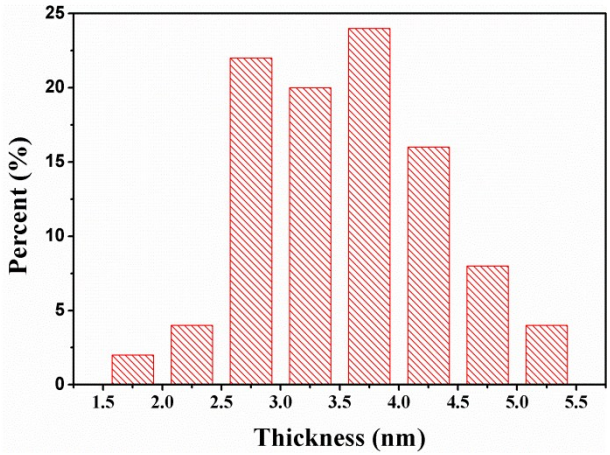

Figure S11. Thickness distribution of the Pd NSs prepared by using KI as the etchant.

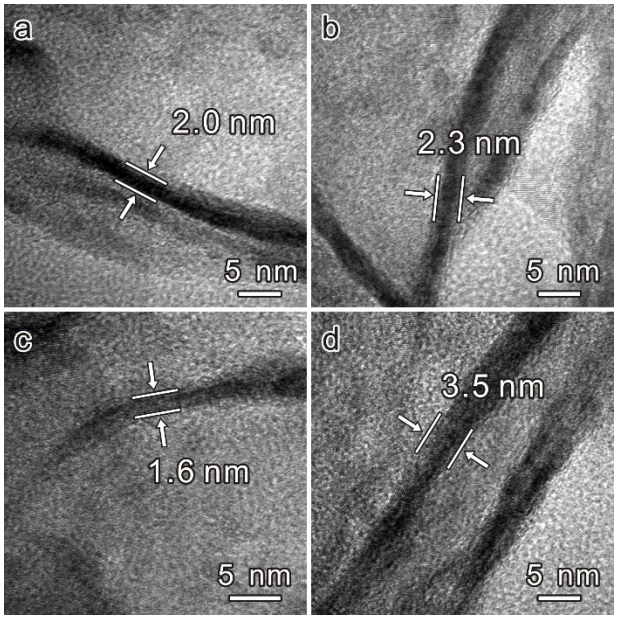

Figure S12. HRTEM images of Pd NSs obtained with different types of the etchants: (a) $FeCl_3$, (b) KCl, (c) KBr, and (d) KI.

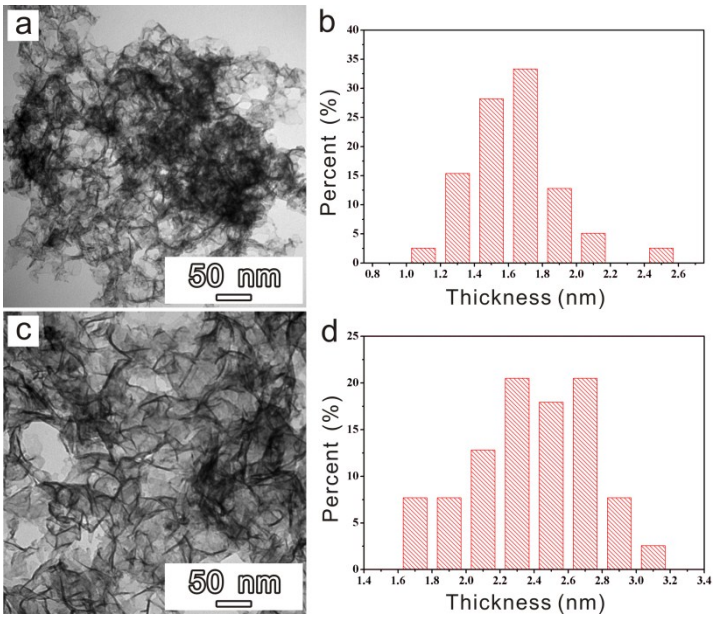

Figure S13. TEM images and thickness distributions of non-layered Pd NSs prepared by using (a, b) KBr and KCl (c, d) as the etchant, respectively.

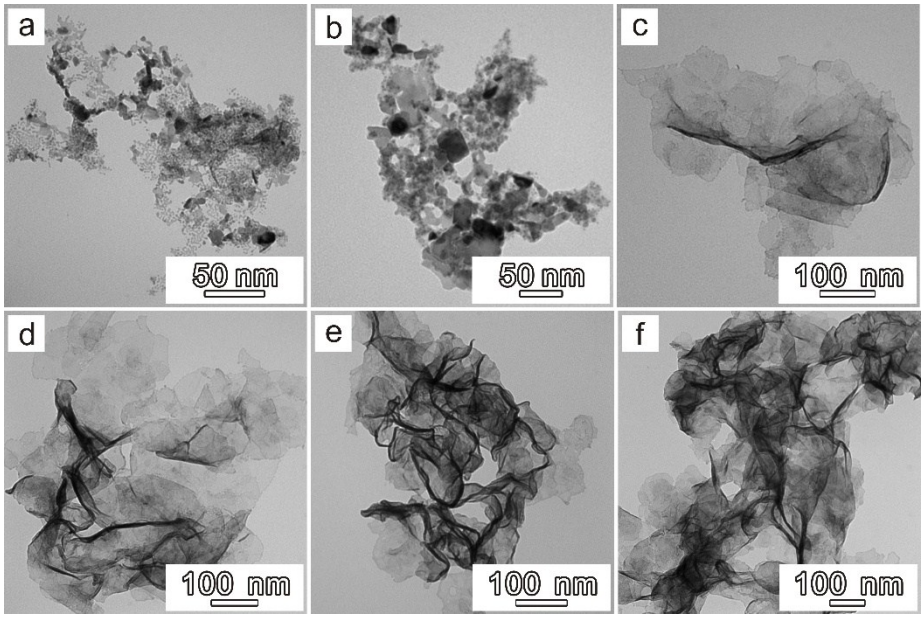

Figure S14. TEM images of the products obtained at different reaction times while using KI as the etchant: (a) t = 3 min, (b) t = 4.5 min, (c) t = 6 min, (d) t = 9 min, (e) t = 12 min, and (d) t = 15 min.