Electronic Supplementary Material (ESI) for Nanoscale.

Electronic Supplementary Information (ESI) for

Unsaturated metal sites-promoted approach to construct strongly coupled noble metal/HNb_3O_8 nanosheets for efficiently thermo/photo-catalytic reduction

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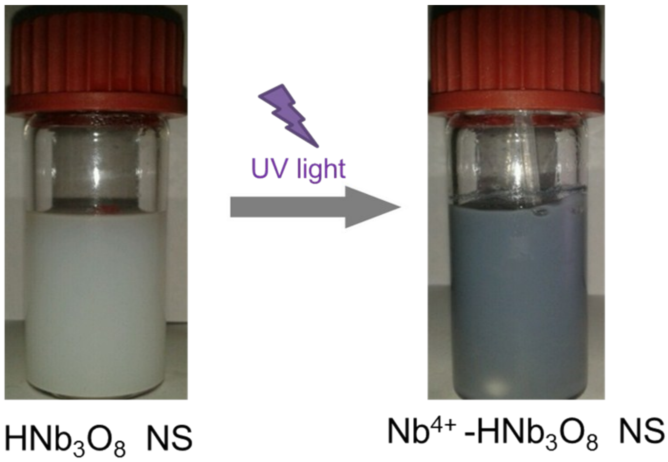

Fig. S1 Digital photograph of the HNb_3O_8 nanosheets dispersion under UV light irradiation. The obvious color change of the HNb_3O_8 nanosheets dispersion indicates the generation of Nb^{4+} metal sites on the surface of the nanosheets.

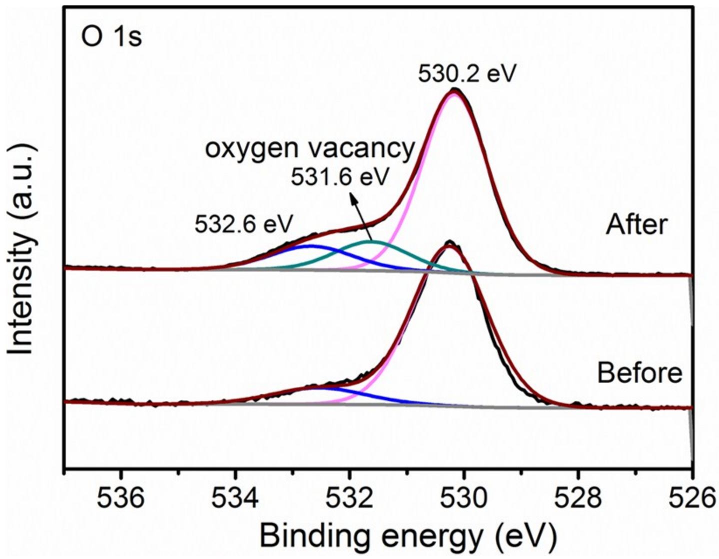

Fig. S2 XPS spectra for O 1s of the HNb_3O_8 NS before and after light illumination.

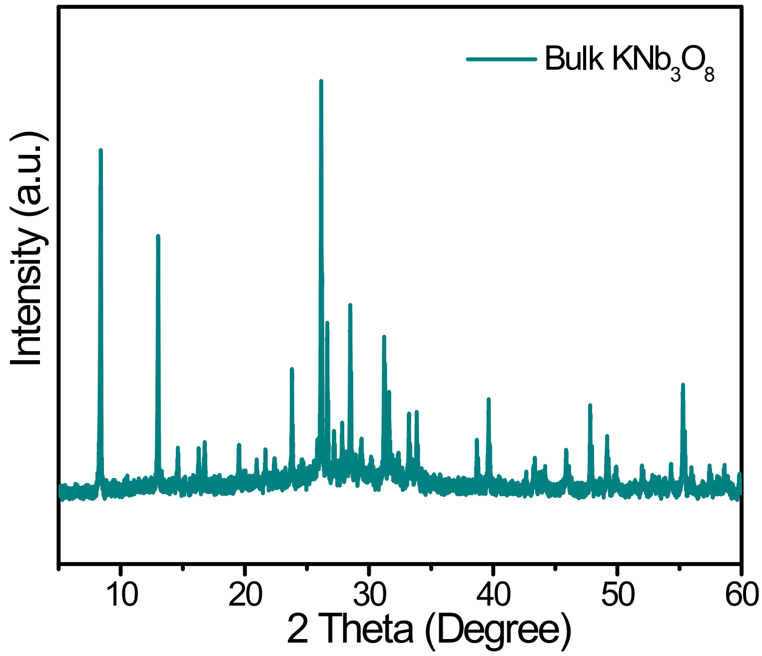

Fig. S3 XRD pattern of bulk KNb_3O_8.

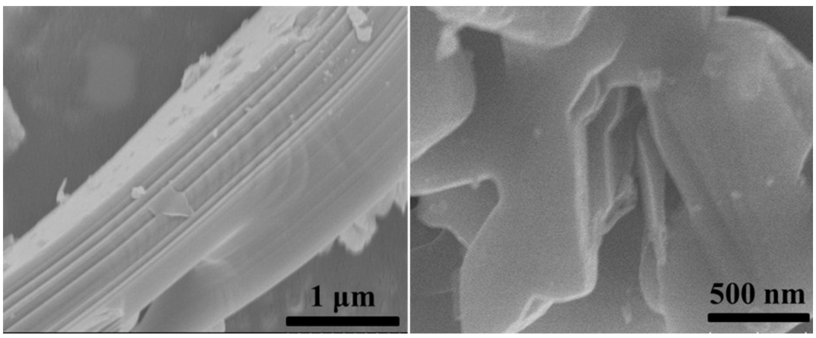

Fig. S4 Additional SEM images of bulk HNb_3O_8.

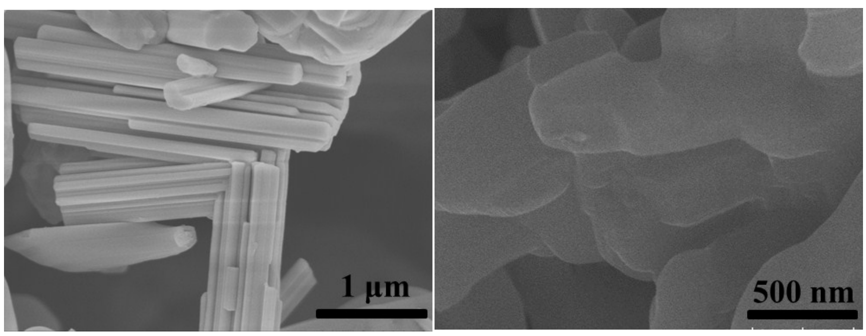

Fig. S5 SEM images of bulk KNb_3O_8.

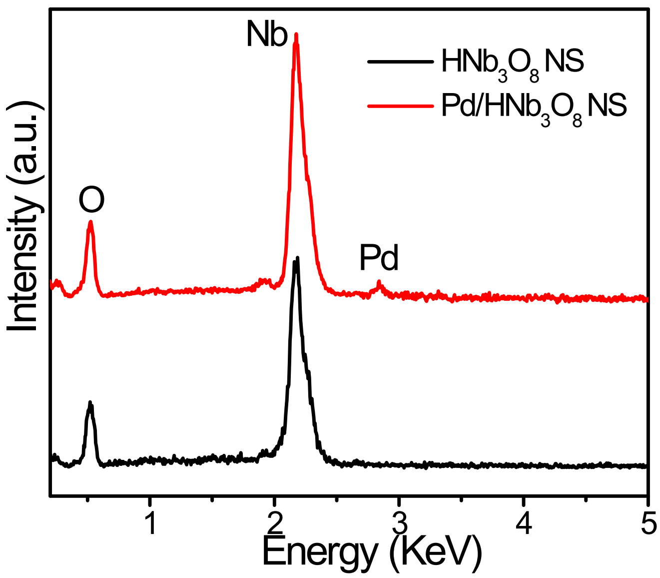

Fig. S6 Energy-dispersive X-ray (EDX) analysis of HNb_3O_8 NS and hybrid Pd/HNb_3O_8 NS composite.

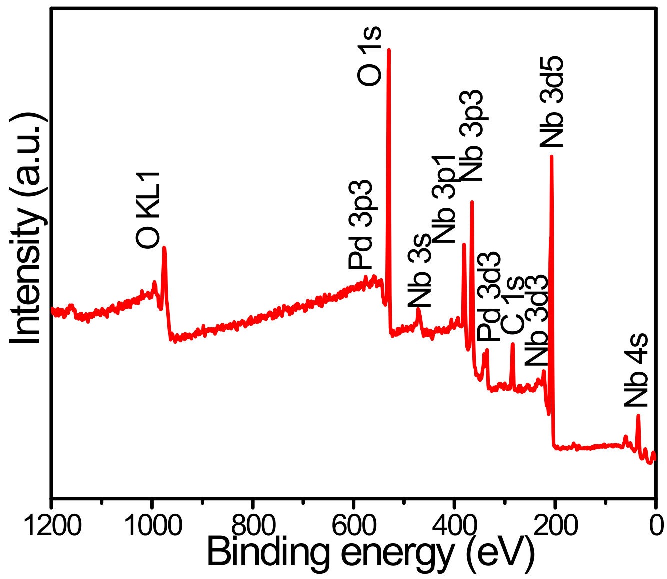

Fig. S7 XPS survey spectra of the as-synthesized Pd/HNb_3O_8 NS hybrid composite.

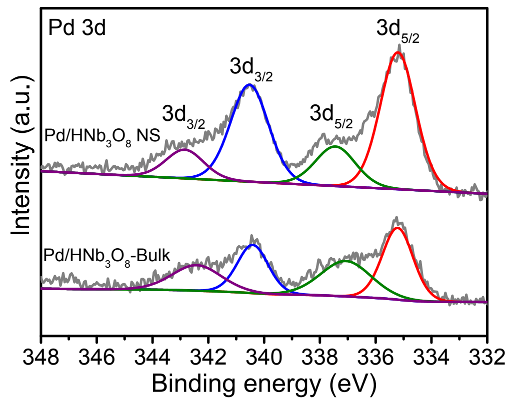

Fig. S8 High-resolution XPS spectra for Pd 3d of the Pd/HNb_3O_8 NS and Pd/HNb_3O_8-Bulk samples.

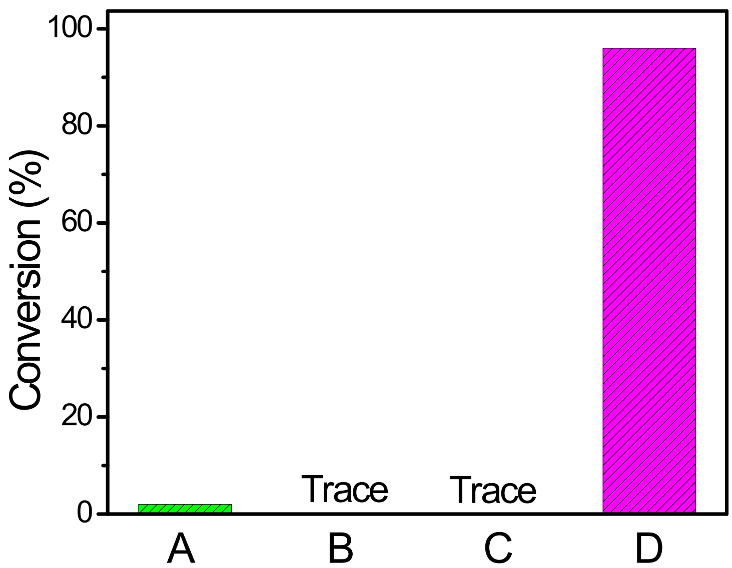

Fig. S9 Control experiments for catalytic hydrogenation of 4-nitroaniline (4-NA) over the Pd/HNb_3O_8 NS composite under room temperature: without the addition of $HCOONH_4$ (A); reaction without Pd/HNb_3O_8 NS (B); reaction with the HNb_3O_8 NS (C), and the reaction with the addition of Pd/HNb_3O_8 NS and $HCOONH_4$ in inert atmosphere (D).

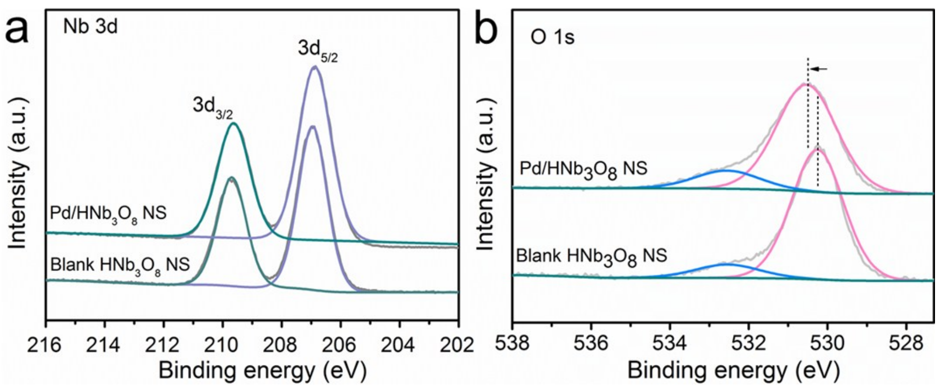

Fig. S10 High-resolution XPS spectra for Nb 3d (a) and O1s (b) of the blank HNb_3O_8 NS and Pd/HNb_3O_8 NS samples.

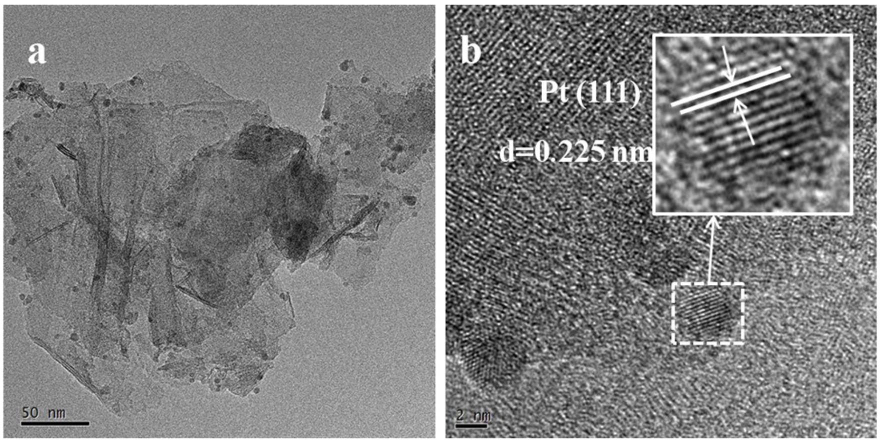

Fig. S11 Typical TEM (a) and HRTEM image (b) of Pt/HNb_3O_8 NS.

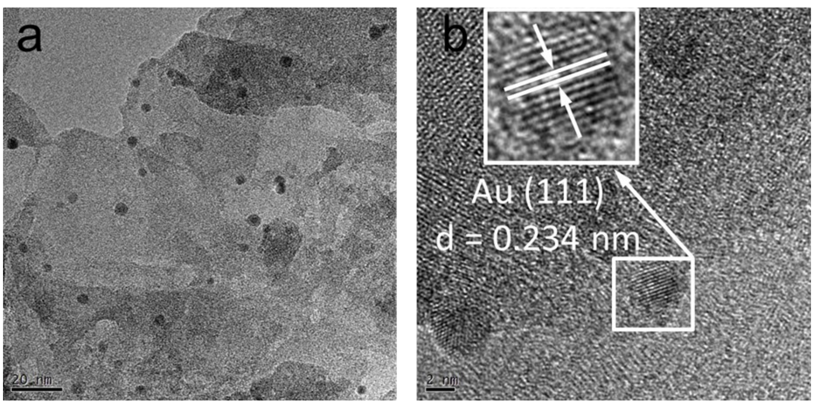

Fig. S12 Typical TEM (a) and HRTEM image (b) of Au/HNb_3O_8 NS.