

†Electronic Supplementary Information

**A hybrid of CdS/HCa<sub>2</sub>Nb<sub>3</sub>O<sub>10</sub> ultrathin nanosheets for promoting  
photocatalytic hydrogen evolution**

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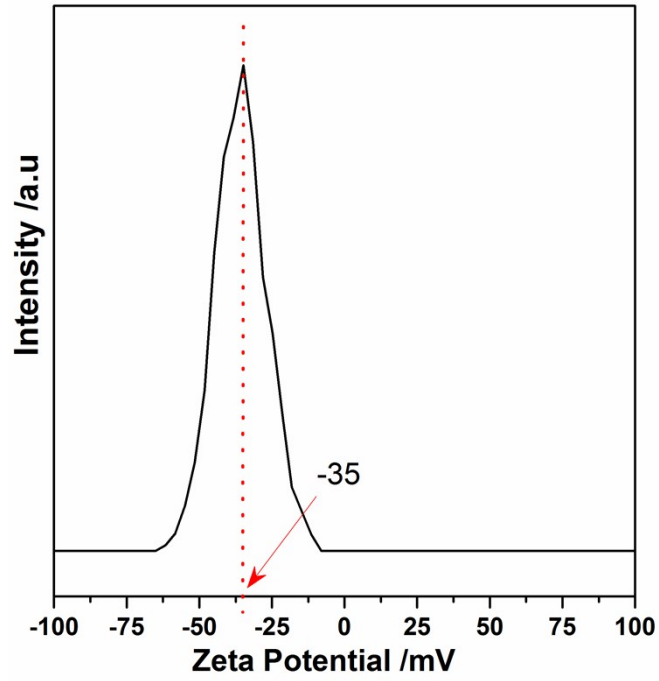


Fig. S1 the Zeta potential of the  $\text{Ca}_2\text{Nb}_3\text{O}_{10}^-$  nanosheet suspensions

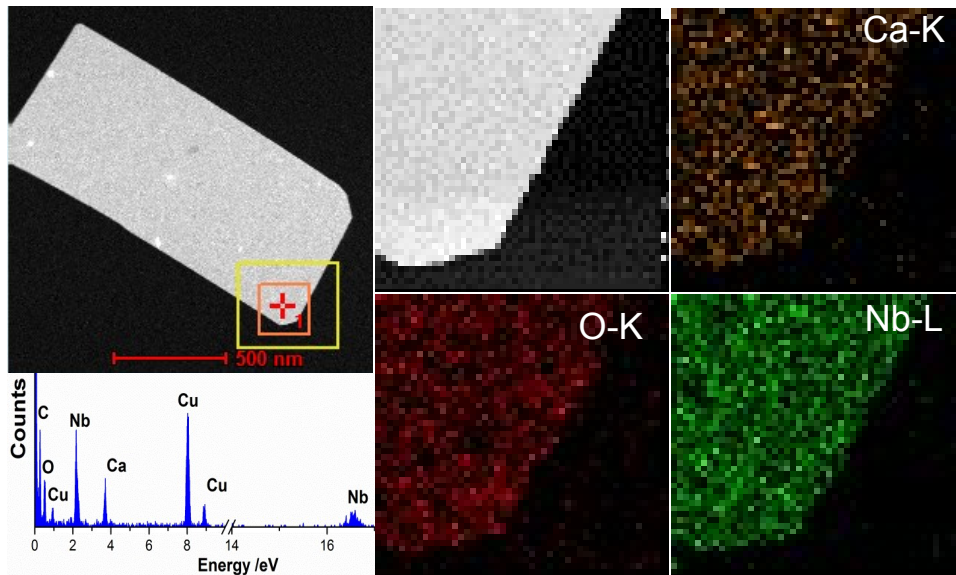


Fig. S2 STEM-EDX mapping of the calcium niobate nanosheet.

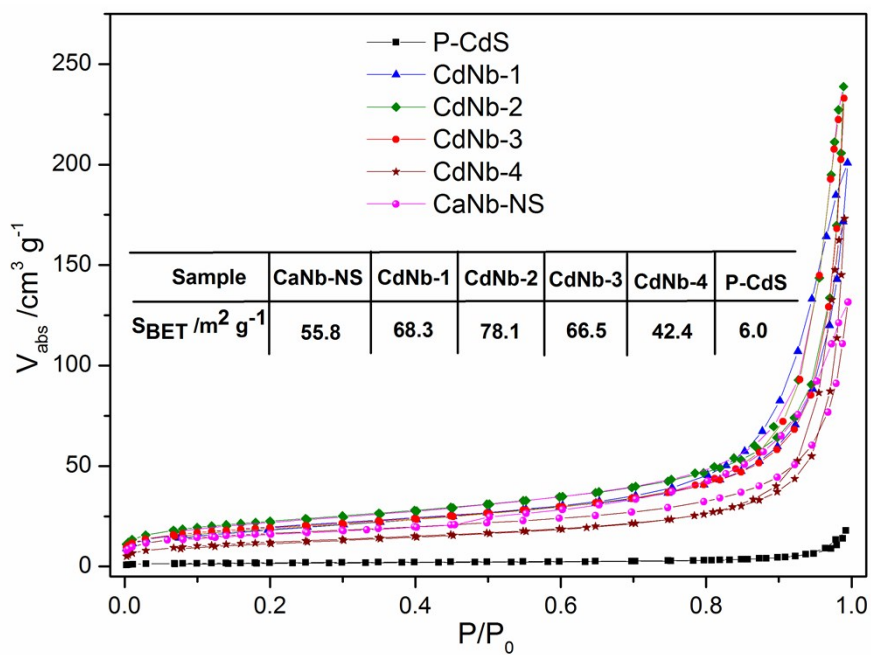


Fig. S3 BET adsorption-desorption isotherm of samples.

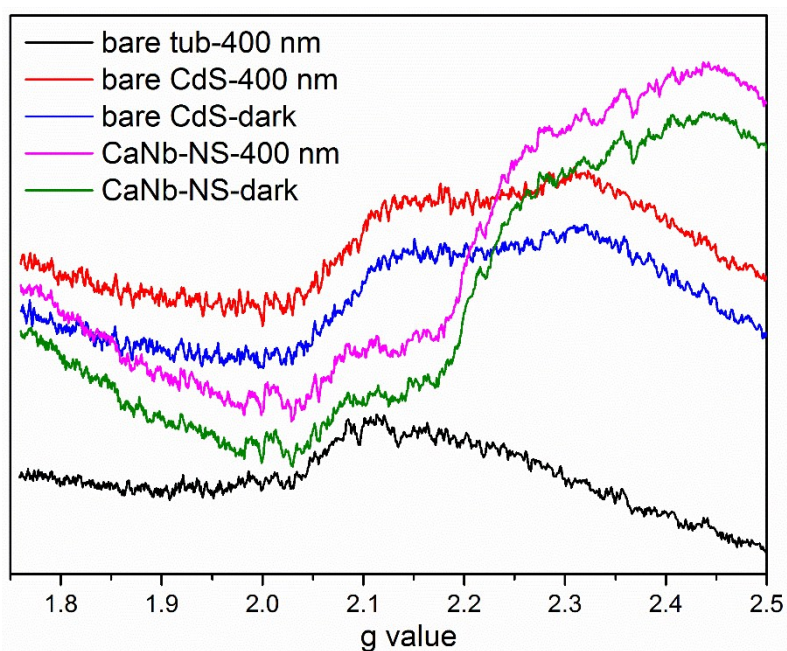


Fig. S4 the EPR spectra of bare CdS and CaNb-NS carried out under dark and light irradiation ( $\lambda > 400$  nm).

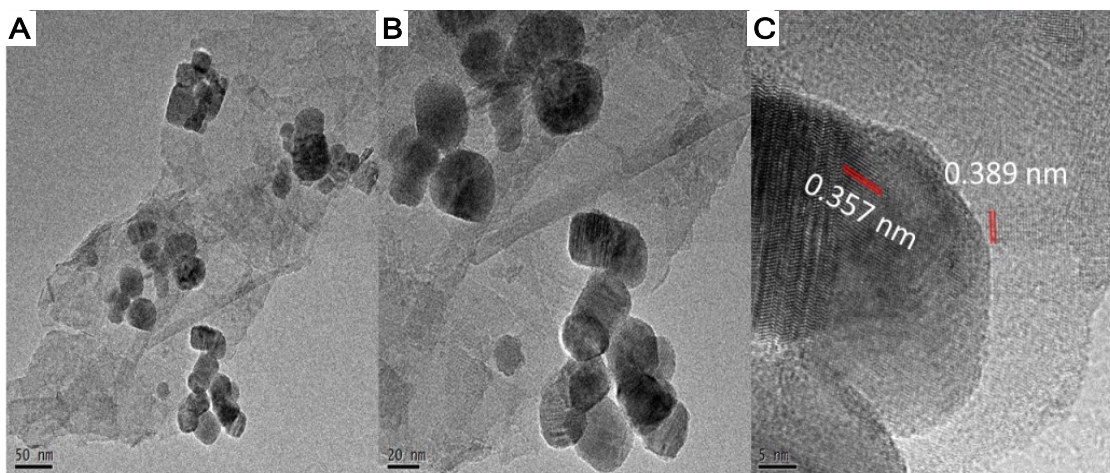


Fig. S5 TEM/HRTEM images of the CdNb-2 after reaction.

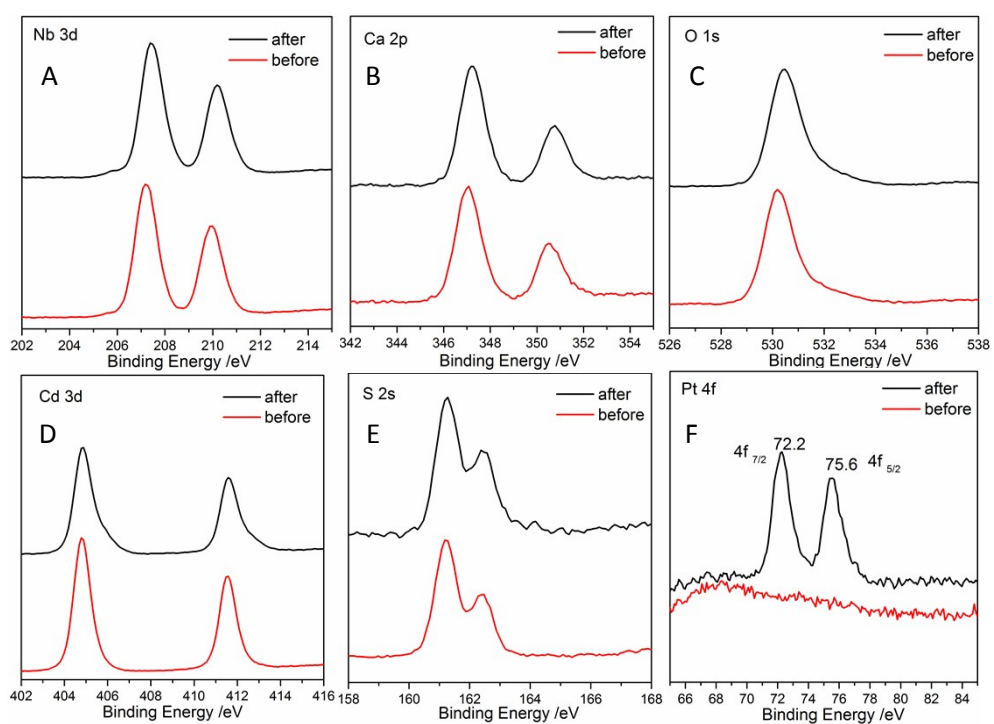


Fig. S6 the XPS spectra for the samples before and after reaction

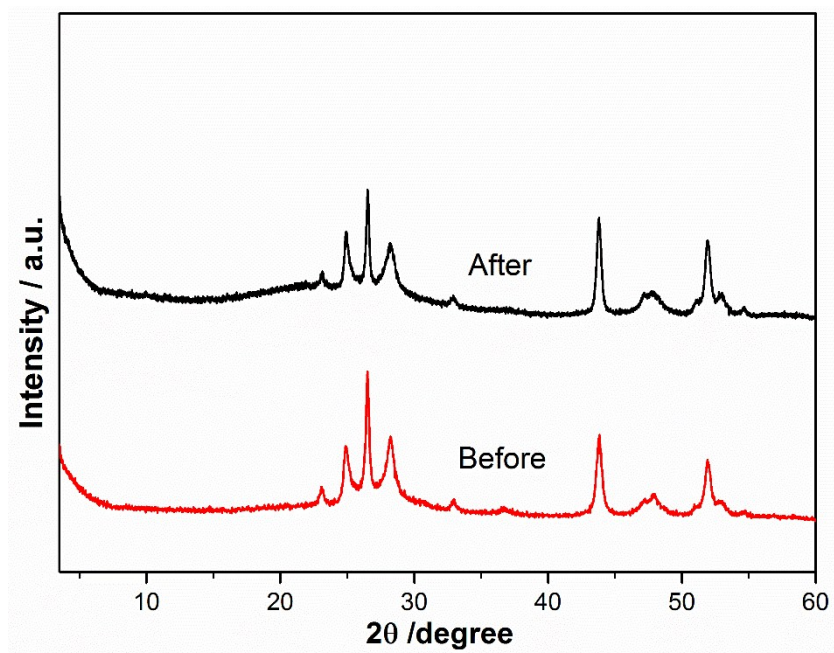


Fig. S7 the XRD patterns for the samples before and after reaction