Supporting Information for

Photocatalytic hydrogen production over CdS: Effects of reaction atmosphere studied by *in situ* Raman spectroscopy

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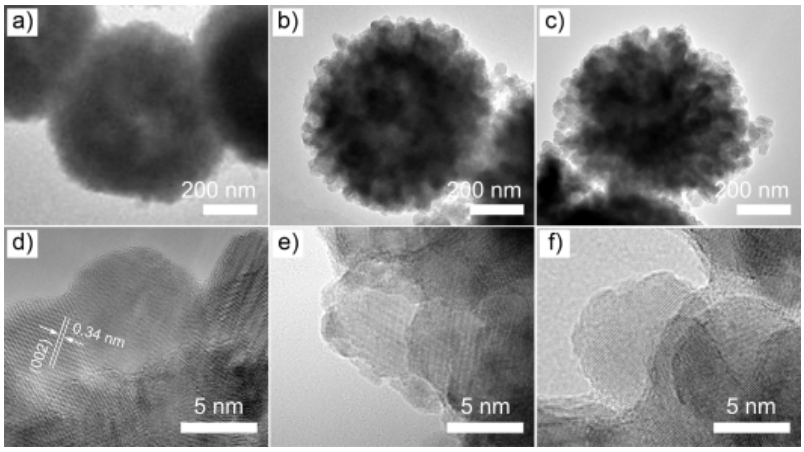

Figure S1 TEM images of CdS (a,d) before and (b,c,e,f) after photocatalytic reaction under (b,e) air and (c,f) Ar.

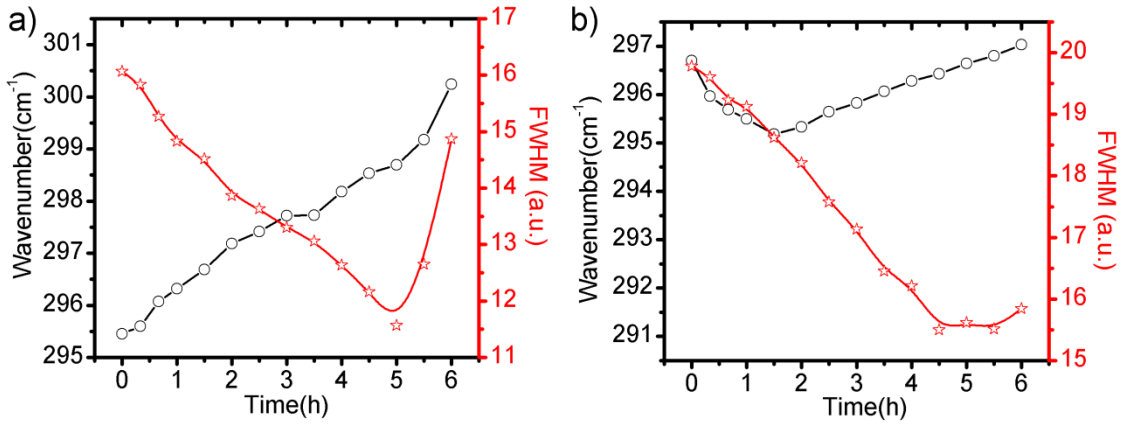

Figure S2 Photocatalytic experiments with in situ Raman monitoring. a) Raman shift and FWHM of CdS 1LO peak determined from in-situ Raman spectra of CdS reacting under Ar/O_2 mixture containing 20% volume fraction of oxygen, and (b) Raman shift and FWHM of CdS 1LO peak determined from in-situ Raman spectra of CdS reacting in vacuum.