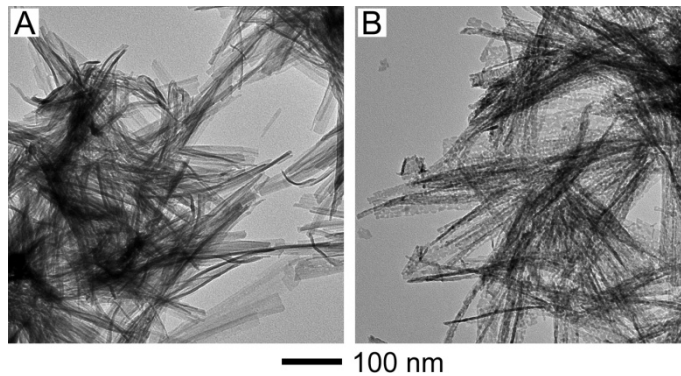


*Supporting Information*

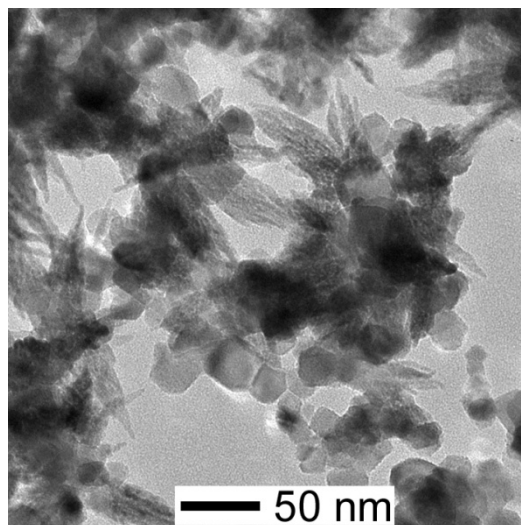
**Decoration of Size-tunable CuO Nanodots on TiO<sub>2</sub> Nanocrystals for Noble  
Metal-free Photocatalytic H<sub>2</sub> Production**

Geon Dae Moon,<sup>†</sup> Ji Bong Joo,<sup>†</sup> Ilkeun Lee, and Yadong Yin\*

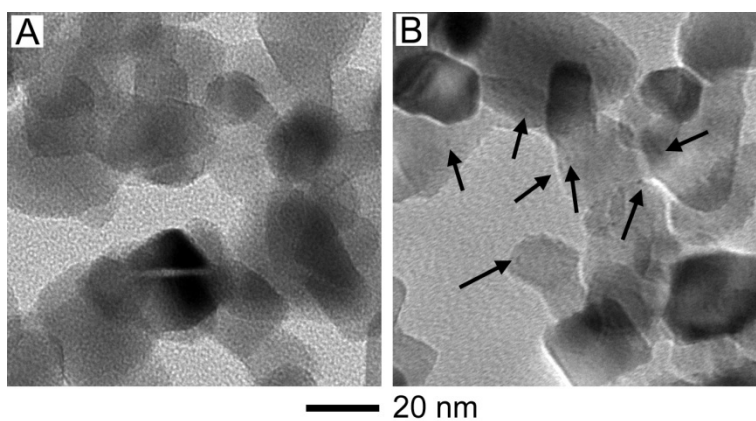
*Department of Chemistry, University of California, Riverside, CA, 92521, USA*



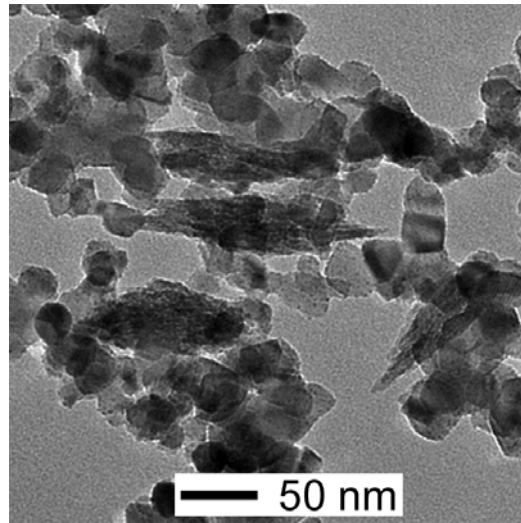
**Figure S1.** TEM images of (A) Cu(OH)<sub>2</sub> nanobelts and (B) mesoporous CuO nanobelts synthesized in the absence of TiO<sub>2</sub> nanocrystals.



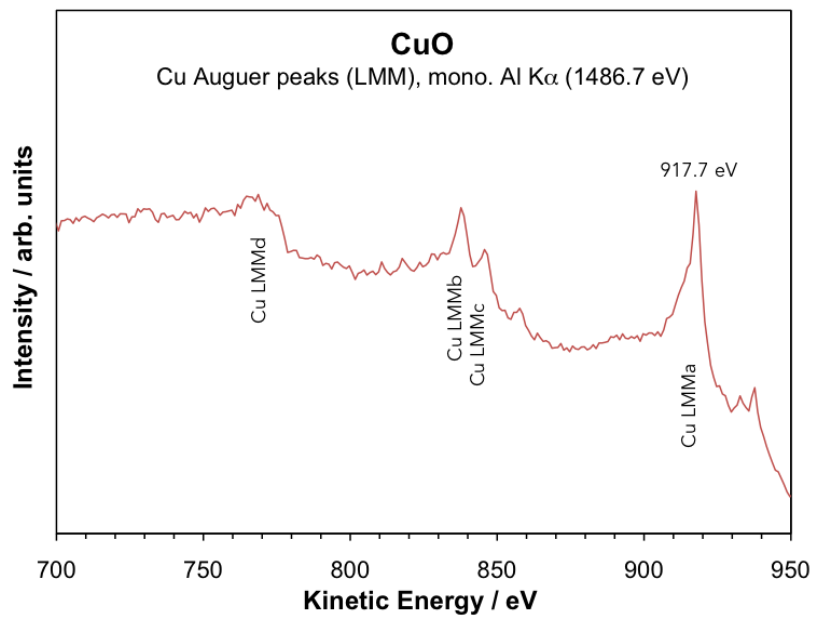
**Figure S2.** TEM image of CuO-TiO<sub>2</sub> synthesized without PAA treatment.



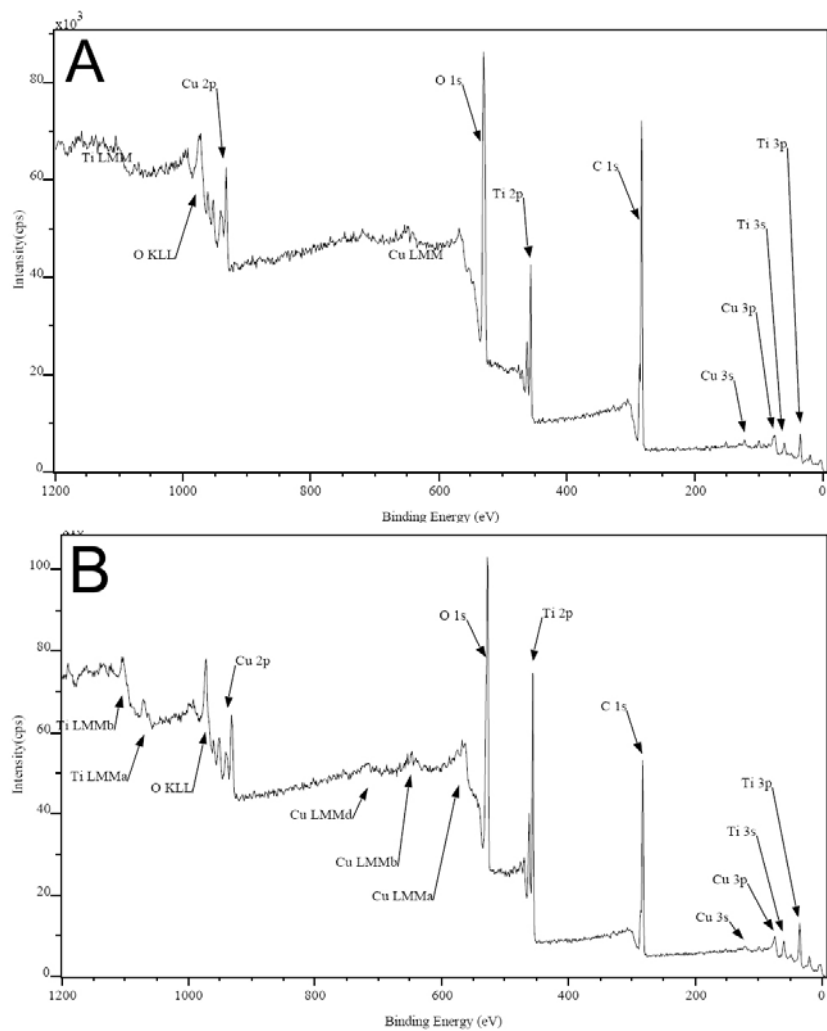
**Figure S3.** TEM images of CuO-loaded TiO<sub>2</sub> nanocrystals with loading amount of 0.4% (A) and 0.8% (B).



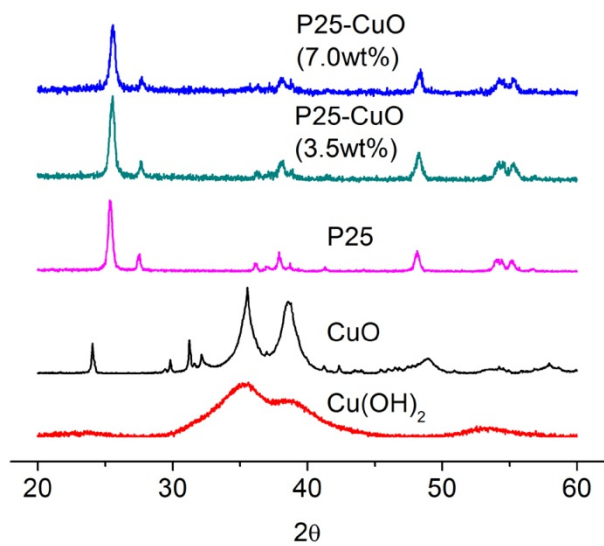
**Figure S4.** TEM images of CuO-loaded TiO<sub>2</sub> nanocrystals with loading amount of 14%.



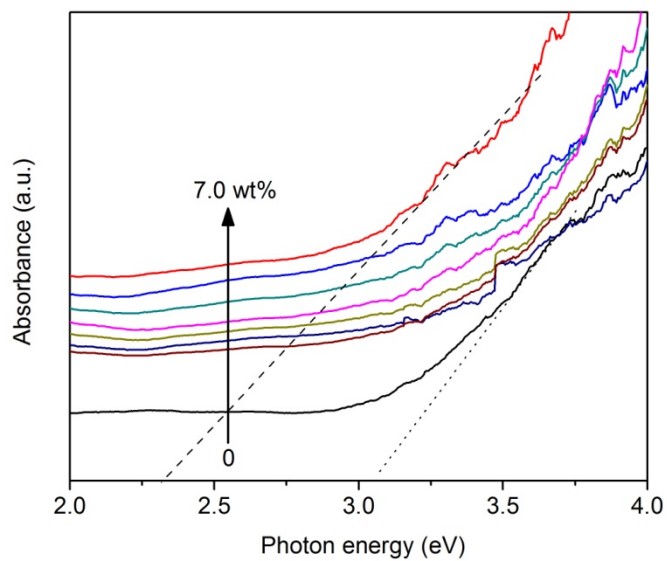
**Figure S5.** The curve of Cu Auger peaks in XPS.



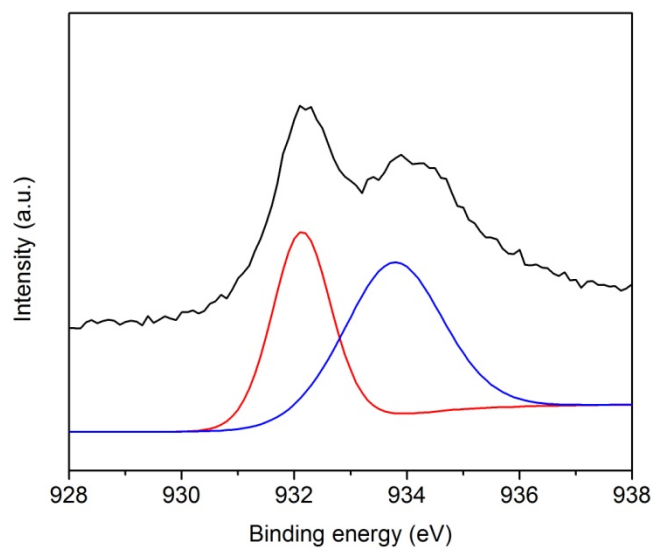
**Figure S6.** Wide scan XPS spectra of (A)  $\text{Cu(OH)}_2$ - and (B)  $\text{CuO}$ -loaded  $\text{TiO}_2$ , respectively.



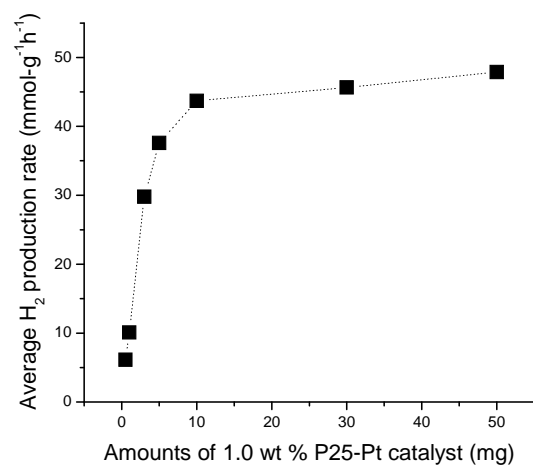
**Figure S7.** XRD patterns of CuO-TiO<sub>2</sub> composites and control samples.



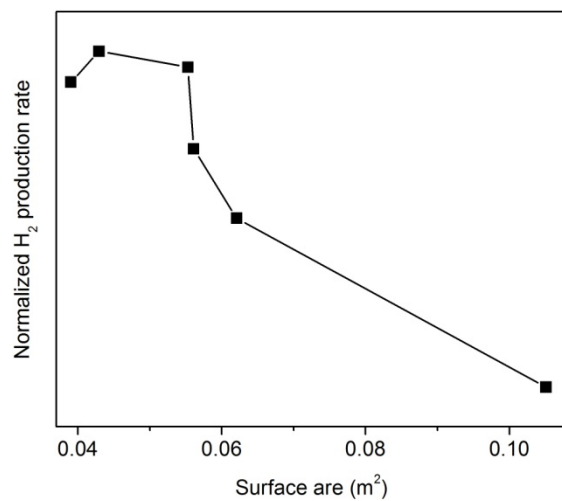
**Figure S8.** UV-vis DRS spectra versus photon energy.



**Figure S9.** The deconvoluted XPS curve in Fig. 4B at 933.8 and 932.1 eV.



**Figure S10.** The relationship between average H<sub>2</sub> production rate and the amount of 1 wt% P25-Pt catalyst used.



**Figure S11.** The H<sub>2</sub> production rate of CuO-loaded TiO<sub>2</sub> photocatalysts normalized by surface area.