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Electronic Supplementary Information for

Optimizing the performance of photocatalytic H<sub>2</sub> generation for ZnNb<sub>2</sub>O<sub>6</sub> synthesized by a two-step hydrothermal method

Yutong Chun,<sup>a</sup> Mufei Yue<sup>a</sup> Pengfei Jiang,<sup>ab\*</sup> Shijian Chen,<sup>b</sup> Wenliang Gao,<sup>a</sup> Rihong Cong,<sup>a</sup>

Tao Yang<sup>a\*</sup>

<sup>a</sup> College of Chemistry and Chemical Engineering, Chongqing University, Chongqing 401331, P. R. China

<sup>b</sup> College of Physics, Chongqing University, Chongqing 401331, P. R. China
\*Corresponding authors, e-mails: pengfeijiang@cqu.edu.cn; taoyang@cqu.edu.cn.

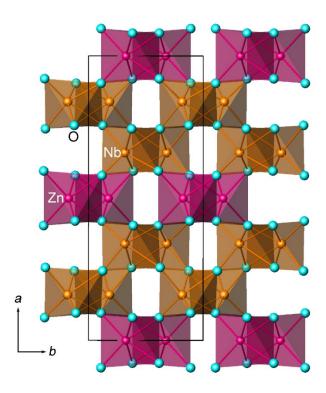


Figure S1 Structure view of ZnNb<sub>2</sub>O<sub>6</sub> along the *c*-axis.

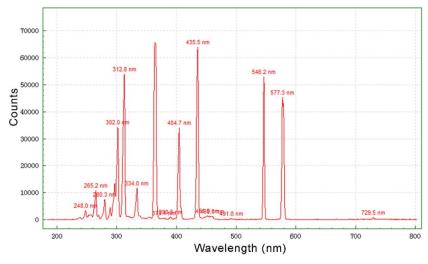


Figure S2 Emission spectrum from the Hg-lamp used in our study.

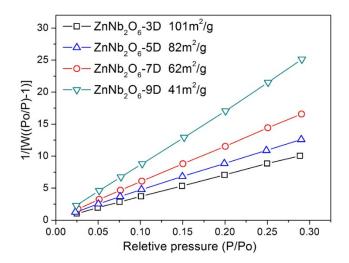


Figure S3 Specific surface areas for  $ZnNb_2O_6$ -3D, -5D, -7D, and -9D estimated according to the BET method.

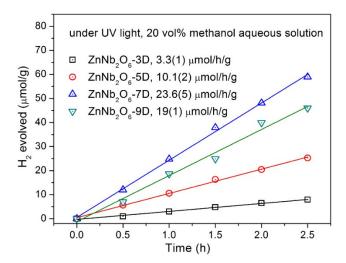


Figure S4 Time-dependent photocatalytic  $H_2$  generation data for as-synthesized  $ZnNb_2O_6$  samples.

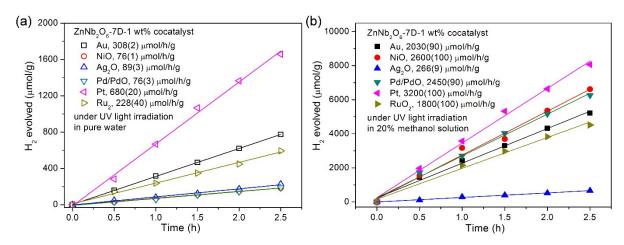


Figure S5 Time-dependent photocatalytic H<sub>2</sub> generation data for ZnNb<sub>2</sub>O<sub>6</sub>-loaded with 1 wt% cocatalyst in (a) water and (b) 20 vol% methanol aqueous solution.

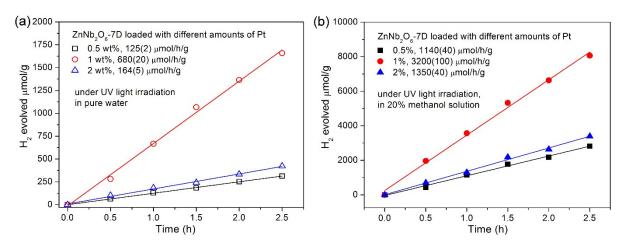


Figure S6 Photocatalytic  $H_2$  evolution curves of  $ZnNb_2O_6$ -7D loaded with different amounts of Pt in (a) water and (b) 20 vol% methanol solution.