

## Electronic Supplementary Information (ESI) for

### Increased Photocurrent of CuWO<sub>4</sub> Photoanodes by Modification with the Oxide Carbodiimide Sn<sub>2</sub>O(NCN)

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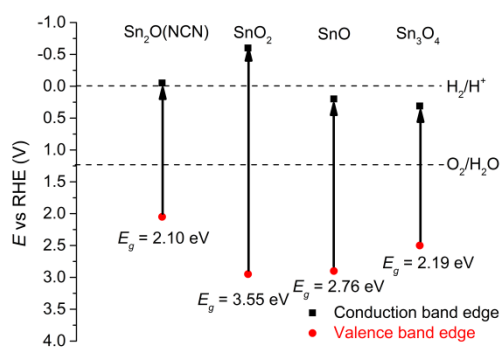
#### Supplement:

**Fig. S1** Electronic structures of Sn<sub>2</sub>O(NCN), SnO, SnO<sub>2</sub> and Sn<sub>3</sub>O<sub>4</sub>. Band edge potentials are referenced to RHE.

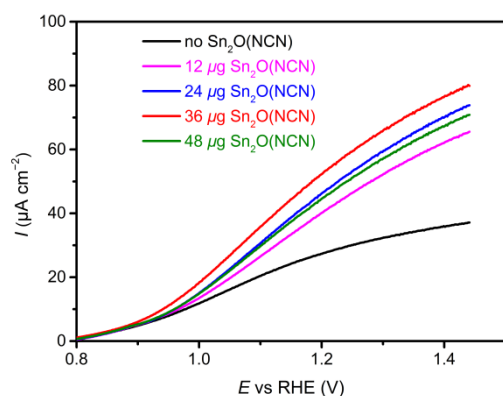
**Fig. S2** LSV of several CuWO<sub>4</sub>/ Sn<sub>2</sub>O(NCN) photoanodes with different amounts of added Sn<sub>2</sub>O(NCN). Measurements were performed in 0.1 M K/NaP<sub>i</sub> electrolyte (pH 7.0) with scan at rate of 10 mV s<sup>-1</sup> under AM 1.5G illumination.

**Fig. S3** CA of CuWO<sub>4</sub>/ Sn<sub>2</sub>O(NCN) photoanodes at 1.23 V vs. RHE for stability test. Measurements were performed in 0.1 M K/NaP<sub>i</sub> electrolyte (pH 7.0) under interrupted illumination.

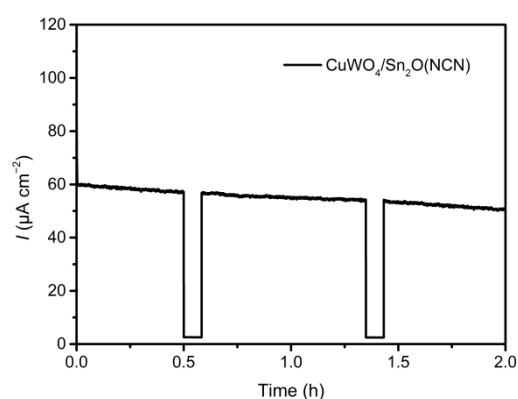
**Fig. S4** CA of CuWO<sub>4</sub>/Sn<sub>2</sub>O(NCN)/cobalt phosphate (CoP<sub>i</sub>) photoanodes at 1.23 V vs. RHE. Measurements were performed in 0.1 M K/NaP<sub>i</sub> electrolyte (pH 7.0) under interrupted AM 1.5G illumination.



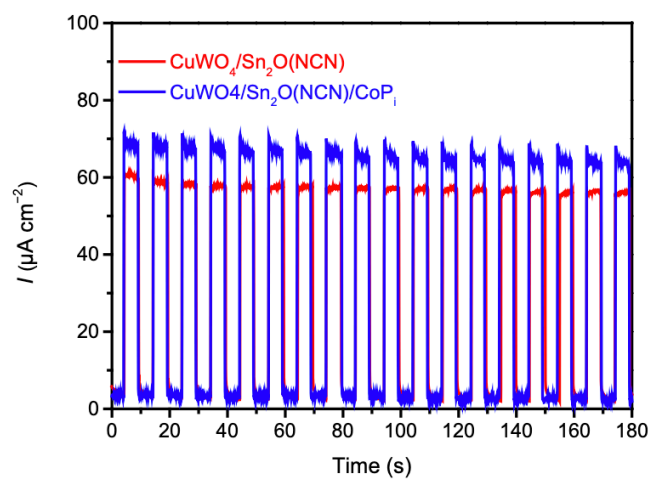
**Fig. S1** Electronic structures of  $\text{Sn}_2\text{O}(\text{NCN})$ ,  $\text{SnO}$ ,  $\text{SnO}_2$  and  $\text{Sn}_3\text{O}_4$ . Band edge potentials are referenced to RHE.



**Fig. S2** LSV of several  $\text{CuWO}_4/\text{Sn}_2\text{O}(\text{NCN})$  photoanodes with different amounts of added  $\text{Sn}_2\text{O}(\text{NCN})$ . Measurements were performed in 0.1 M  $\text{K}/\text{NaP}_i$  electrolyte (pH 7.0) with scan at rate of  $10 \text{ mV s}^{-1}$  under AM 1.5G illumination.



**Fig. S3** CA of  $\text{CuWO}_4/\text{Sn}_2\text{O}(\text{NCN})$  photoanodes at 1.23 V vs. RHE for stability test. Measurements were performed in 0.1 M  $\text{K}/\text{NaP}_i$  electrolyte (pH 7.0) under interrupted illumination.



**Fig. S4** CA of  $\text{CuWO}_4/\text{Sn}_2\text{O}(\text{NCN})/\text{cobalt phosphate (CoP}_i\text{)}$  photoanodes at 1.23 V vs. RHE. Measurements were performed in 0.1 M  $\text{K}/\text{NaP}_i$  electrolyte (pH 7.0) under interrupted AM 1.5G illumination.  $\text{CoP}_i$  was deposited as in our previous work (*ACS Appl. Mater. Interfaces* 2019, 11, 21, 19077-19086).