## **Supporting Information**

# Visible-light-driven photocatalytic water oxidation over $LaNbON_2\text{-}LaMg_{2/3}Nb_{1/3}O_3 \ solid \ solutions$

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Supporting information content

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**Figure S2.** Thermogravimetric analysis (TGA) curves of  $(LaNbON_2)_{1-x}$   $(LaMg_{2/3}Nb_{1/3}O_3)_x$   $(0.0 \le x \le 1.0)$  powders in air with heating rate of 10 K/min from 25 °C to 1300 °C

Figure S3. PL spectra of LaNbON<sub>2</sub>, (LaNbON<sub>2</sub>)<sub>0.8</sub> (LaMg<sub>2/3</sub>Nb<sub>1/3</sub>O<sub>3</sub>)<sub>0.2</sub> (x = 0.2), LaMg<sub>2/3</sub>Nb<sub>1/3</sub>O<sub>3</sub>.

#### Table:

**Table S1.** Band gap and N content from TGA of sample powders

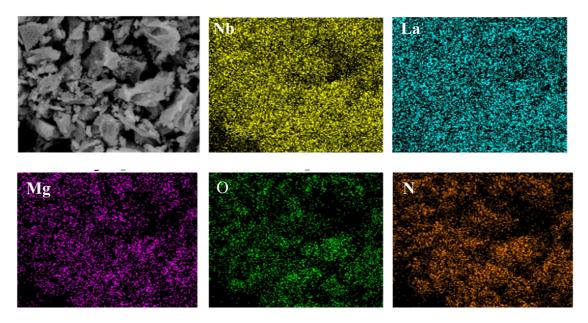


Figure S1. SEM-EDX mapping of particles of sample (LaNbON<sub>2</sub>)<sub>0.8</sub>  $(LaMg_{2/3}Nb_{1/3}O_3)_{0.2} \ (x=0.2).$ 

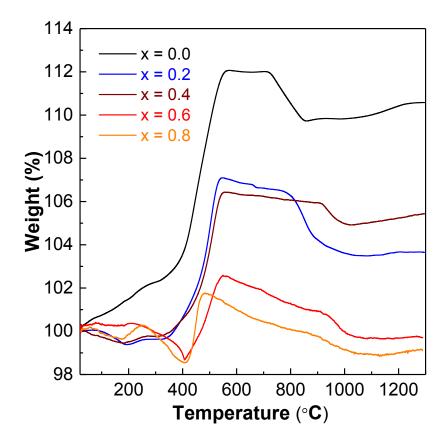


Figure S2. Thermogravimetric analysis (TGA) curves of  $(LaNbON_2)_{1-x}$  ( $LaMg_{2/3}Nb_{1/3}O_3$ )<sub>x</sub> ( $0.0 \le x \le 1.0$ ) powders in air with heating rate of 10 K/min from 25 °C to 1300 °C

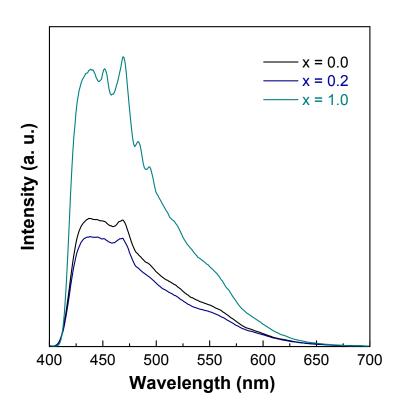


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Table S1. Band gap and N content from TGA of sample powders

x	Band gap (eV)	N content from TGA (%)
0.0	1.50	9.28%
0.2	1.51	8.23%
0.4	1.93	6.14%
0.6	2.14	3.12%
0.8	2.23	1.43%
1.0	4.11	_