Supplementary Materials

N-Doped and Cu-Doped TiO₂-B Nanowires with Enhanced Photoelectrochemical Activity

Jingjie Su,^{1,†} Zhaodong Li,^{2,†} Yongquan Zhang,³ Yingjin Wei,^{3,*} Xudong Wang^{1,2,*}

 Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences; National Center for Nanoscience and Technology (NCNST), Beijing 100083, China.
Department of Materials Science and Engineering, University of Wisconsin-Madison, Madison, WI 53706, USA
Key Laboratory of Physics and Technology for Advanced Batteries (Ministry of

Education), College of Physics, Jilin University, Changchun 130012, P. R. China.

Email: XW: xwdong.wang@wisc.edu; YW: yjwei@jlu.edu.cn



Fig.ure S1. (a) Full XPS spectra of undoped (black profile) and N-doped (red profile) TiO₂ NWs; N 1s signal is observed in N-doped sample but absent in undoped sample. **(b)** Full XPS spectra of undoped (black profile) and Cu-doped (red profile) TiO₂ NWs.



Figure S2. (a) Deconvoluted XPS spectra for O 1s peak, Ti 2p peak, and N 1s peak of undoped TiO_2 NWs prepared by hydrothermal method. (b) Deconvoluted XPS spectra for O 1s peak, Ti 2p peak, and Cu 2p peak of undoped TiO_2 NWs prepared by microwave assisted method.



Figure S3. XRD characterizations show the phases of undoped (**a**) and N-doped TiO_2 NWs (**b**), as well as the undoped (**c**) and Cu-doped TiO_2 NWs (**d**) before and after the thermal annealing. The results indicate the phase stabilization when the thermal annealing was applied for photoanode preparation.