## **Supporting Information**:

## Low Temperature Hydrothermal Synthesis of Vertically Aligned TiO<sub>2</sub> Nanoplatelet Arrays for Solar Energy Conversion Applications

Son Hoang, Sean P. Berglund, Raymond R. Fullon, Ryan L. Minter, and C. Buddie Mullins\*

Departments of Chemical Engineering and Chemistry and Biochemistry, Center for

Electrochemistry, Texas Materials Institute, Center for Nano- and Molecular Science, University

of Texas at Austin

1 University Station C0400

Austin, TX 78712-0231

Author to whom correspondence should be addressed: mullins@che.utexas.edu



Figure S1. Typical light intensity for IPCE and EQE measurements



**Figure S2**. (a) SEM image of micron-size powder aggregating on the bottom of the reactor and (b) Higher magnification image of the area in the red box



Figure S3. SEM images of  $TiO_2$  nanoplatelets grown on various substrates: (a) Ti foil, (b)

glass, (c) Si wafer, and (d) polyethylene terephthalate (PET) plastic.



Figure S4. SEM image of a typical  $TiO_2$  nanoplatelet film annealed in air at 500 °C for 30 minutes.



**Figure S5.** Mott-Schottky plot obtained in the dark in 1 M KOH electrolyte for a typical  $TiO_2$  nanoplatelet sample.