Supporting Information

Performance Enhancement of Quantum-Dot-Sensitized Solar Cells by Potential-Induced Ionic Layer Adsorption and Reaction

I-Ping Liu[†], *Chien-Wei Chang*[†], *Hsisheng Teng*[†,‡,§], *Yuh-Lang Lee*[*,†,§]

[†]Department of Chemical Engineering, [‡] Center for Micro/Nano Science and Technology, [§]Research Center for Energy Technology and Strategy (RCETS), National Cheng Kung University, Tainan 70101, Taiwan

AUTHOR INFORMATION

Corresponding Author: Yuh-Lang Lee

*E-mail: yllee@mail.ncku.edu.tw.

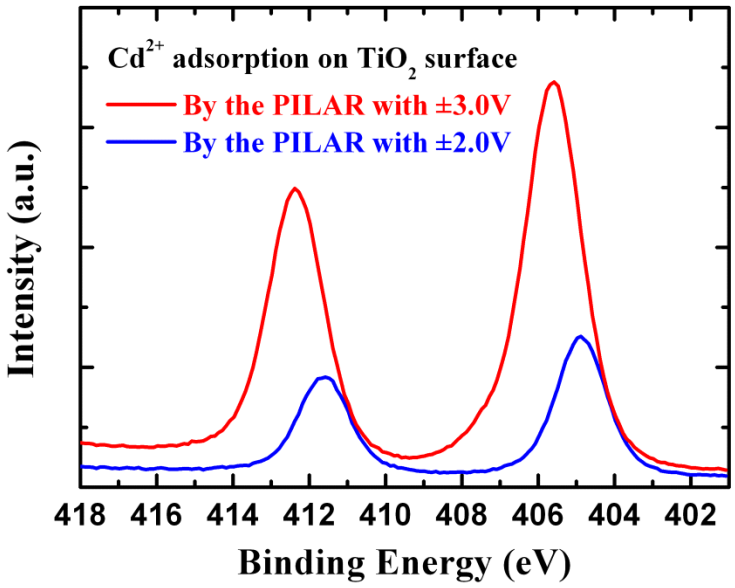

Figure S1. XPS spectra of Cd^{2+} adsorbed TiO_2 films prepared by the PILAR method with different applied biases.

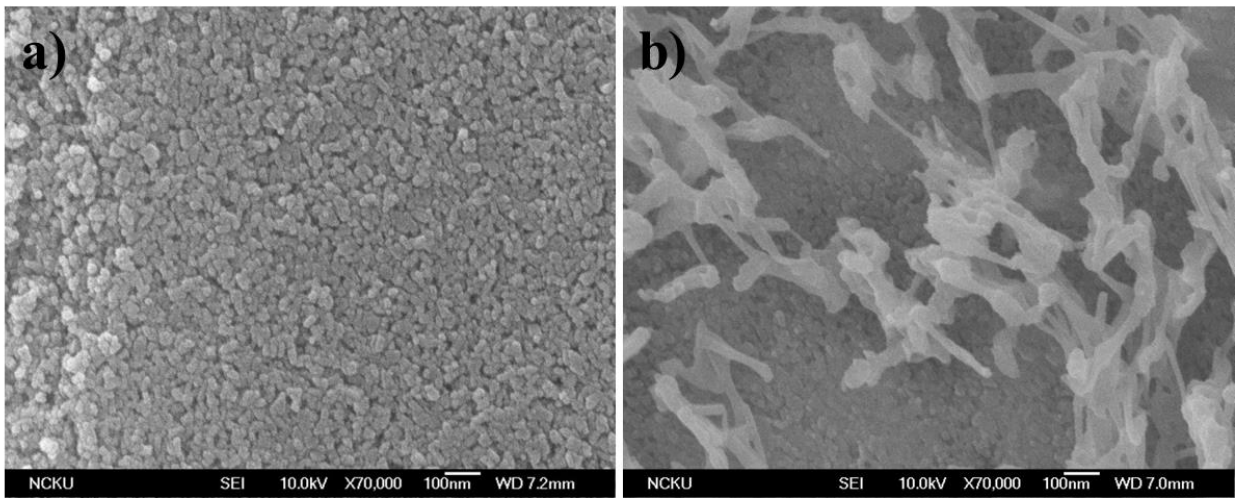

Figure S2. Top-view SEM images of PILAR treated TiO_2 films prepared by the applied biases of (a) ±2.0V and (b) ±3.0V.

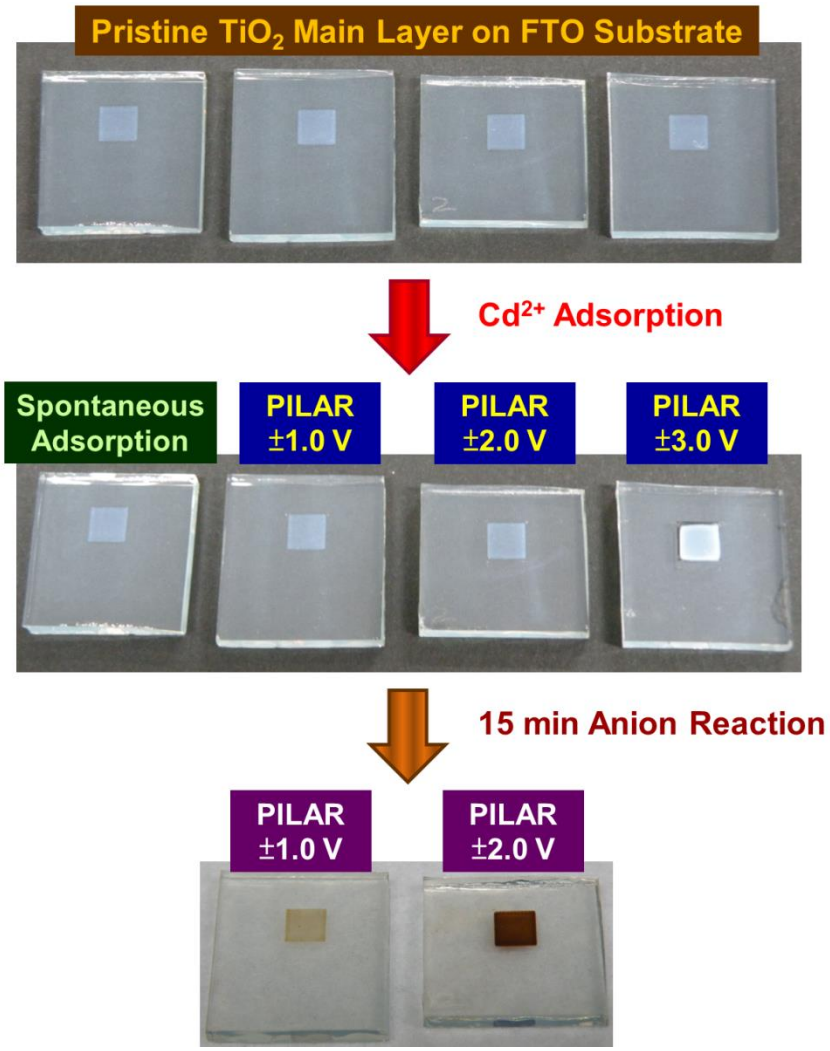

Figure S3. Comparative photographs of pristine TiO_2 films, Cd^{2+} anchored TiO_2 films prepared by different method, and the corresponding CdSe QD-sensitized photoelectrodes.

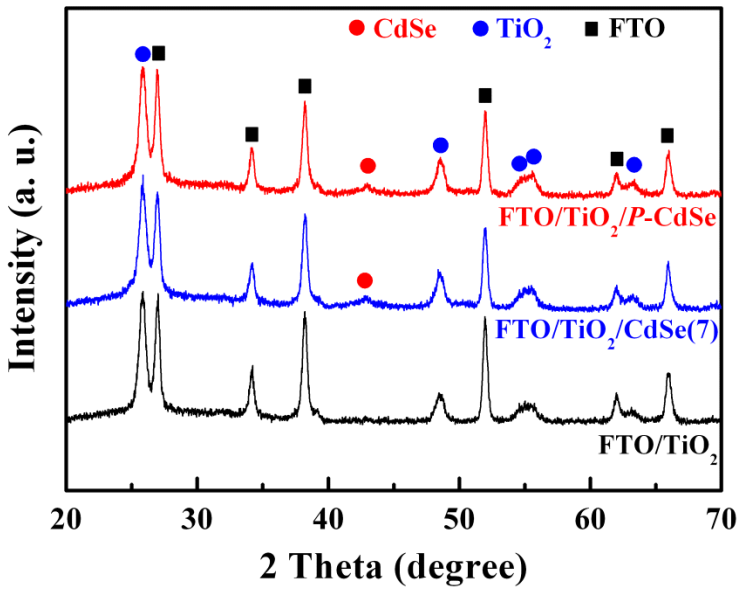

Figure S4. XRD patterns of FTO/TiO_2 electrode, FTO/TiO_2/CdSe(7) electrode fabricated by the SILAR process, and FTO/TiO_2/*P*-CdSe electrode prepared by the PILAR technique with 25-min anion reaction. The XRD peaks of FTO, TiO_2, and CdSe were characterized according to the ref. S1, JCPDS file No. 21−1272, and 19−0191, respectively.

Supporting Information Reference

[S1] Song, X.; Wang, M.; Deng, J.; Yang, Z.; Ran, C.; Zhang, X.; Yao, X. One-Step Preparation and Assembly of Aqueous Colloidal CdS_xSe_{1-x} Nanocrystals within Mesoporous TiO_2 Films for Quantum Dot-Sensitized Solar Cells. *ACS Appl. Mater. Interfaces* **2013**, *5*, 5139–5148.