Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Wire-Supported CdSe Nanowire Array Photoelectrochemical Solar Cells

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Supporting Information:

1. **Figure S1. Transmission electron microscopy (TEM) images of CdSe nanowires.**
2. **Figure S2. Scanning electron microscopy (SEM) images of Ti wire-supported CdSe nanostructures.**
3. **Figure S3. J-V curves of a solar cell with Pt counter electrode.**
4. **Figure S4. IPCE spectrum of a planar cell.**

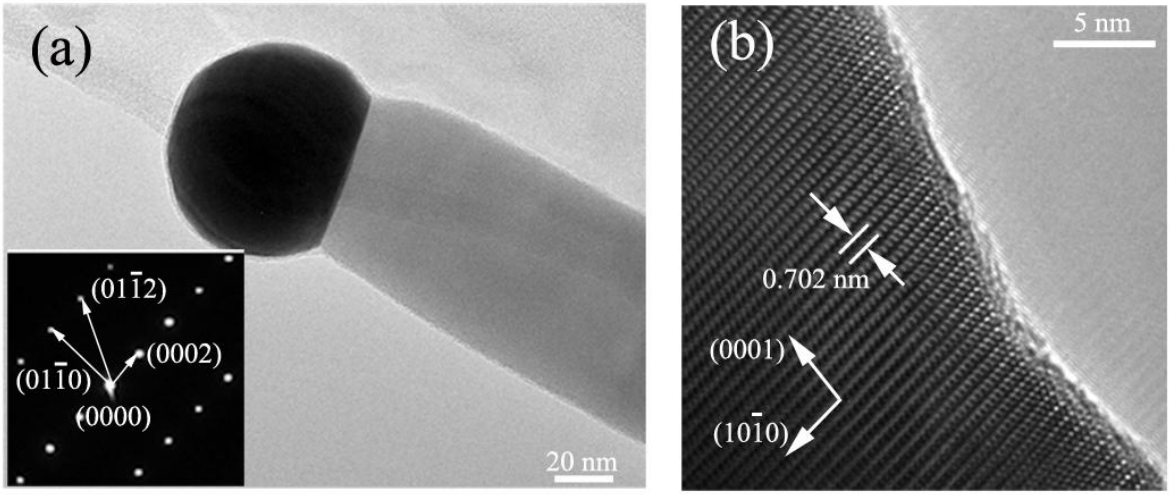

Figure S1. TEM images of CdSe nanowires. (a) TEM image of an Au nanoparticle at the tip of a CdSe nanowire. Inset, selected area electron diffraction of the CdSe nanowire. (b) High-resolution TEM image of the CdSe nanowire.

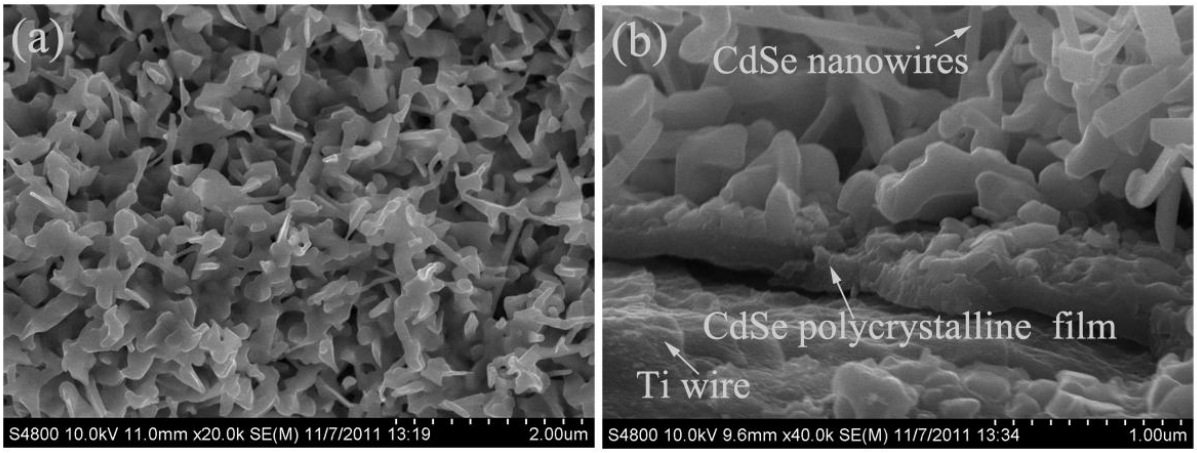

Figure S2. SEM images of Ti wire-supported CdSe nanostructures. (a) SEM image of a CdSe polycrystalline film underneath the nanowire arrays which have been removed by ultrasonic process. (b) SEM image of a cross section of Ti wire-supported CdSe nanowire array showing that CdSe nanowires grow from the polycrystalline film.

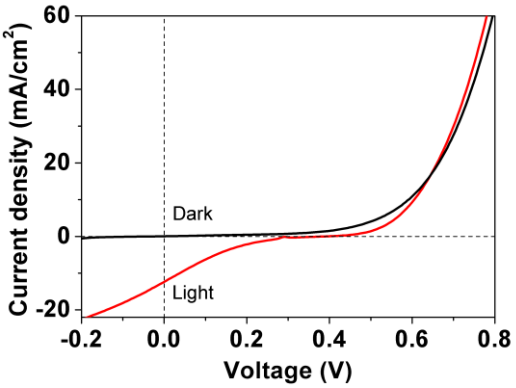

Figure S3. J-V curves of a solar cell with Pt counter electrode. The Pt electrode was placed in parallel to the Ti-CdSe wire with very short distance and filled with electrolyte in between to simulate the traditional photoelectrochemical cell.

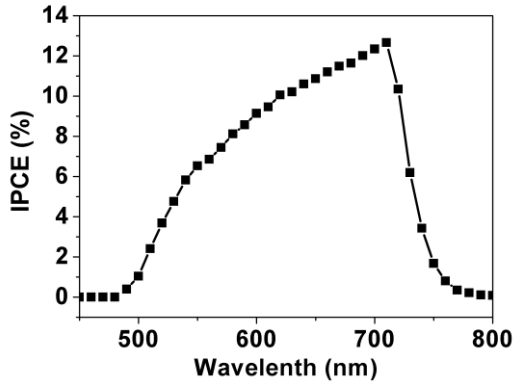

Figure S4. IPCE spectrum of a planar cell. The solar cell was based on CdSe nanowires grown on a Ti foil substrate with the same cell configuration.