Supplementary Information

Figure S1: Chronopotentiometric measurement at -0.5 mA cm$^{-2}$. The silver contact degrades quickly due to delamination from the electrode, whereas the TiO$_2$ layer is stable for at least 2 h.
Figure S2: Photovoltaic characteristic of an a-Si:H/a-Si:H solar cell in the dark and under AM1.5 illumination.

- $I_{SC} = 6.4 \text{ mA/cm}^2$
- $U_{OC} = 1.8 \text{ V}$
- $\eta = 9.0 \%$
Figure S3: Grazing incident XRD of TiO$_2$ layer on corning class substrate.

Figure S4: SEM image of electrochemical deposited platinum on the TiO$_2$ covered tandem cell.