

## Supplementary Information

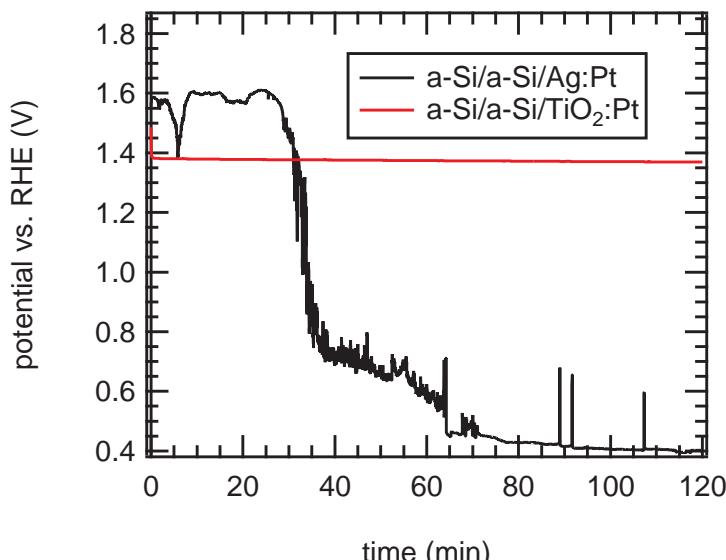


Figure S1: Chronopotentiometric measurement at  $-0.5 \text{ mA cm}^{-2}$ . The silver contact degrades quickly due to delamination from the electrode, whereas the  $\text{TiO}_2$  layer is stable for at least 2 h.

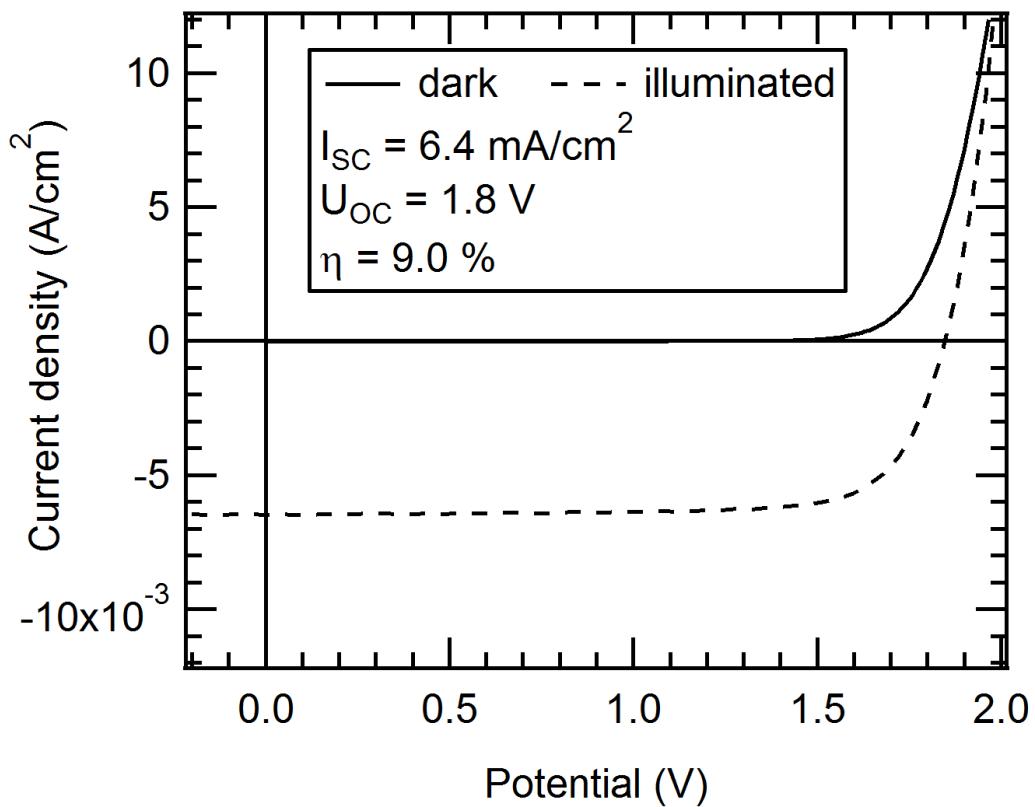


Figure S2: Photovoltaic characteristic of an a-Si:H/a-Si:H solar cell in the dark and under AM1.5 illumination.

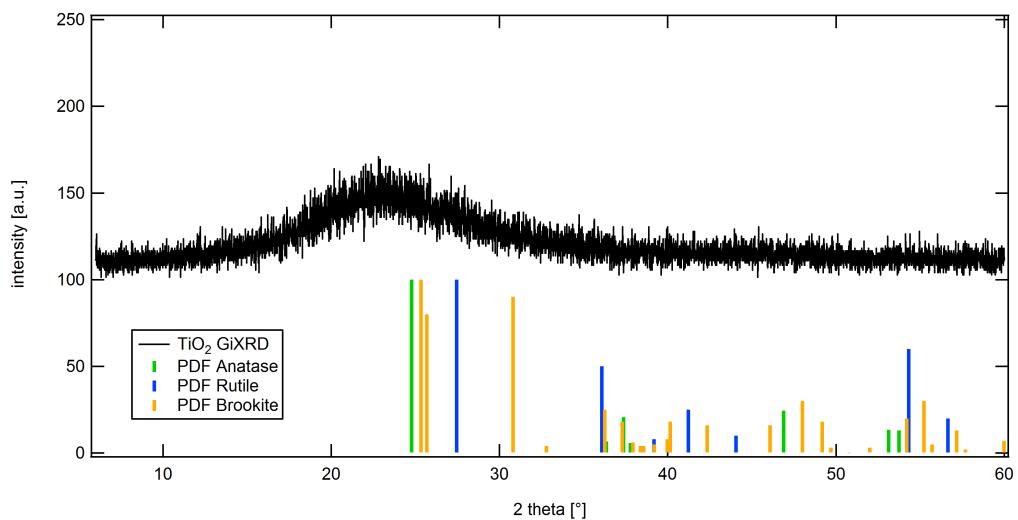


Figure S3: Gracing incident XRD of  $\text{TiO}_2$  layer on corning class substrate.

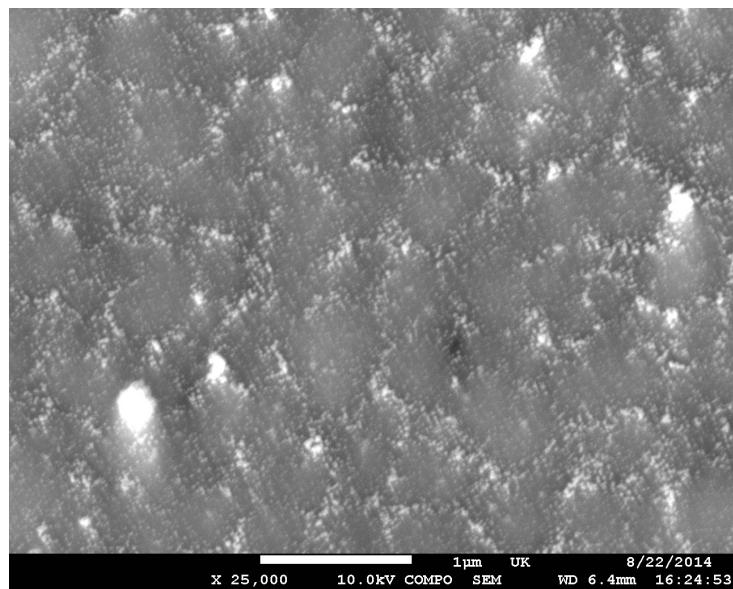


Figure S4: SEM image of electrochemical deposited platinum on the  $\text{TiO}_2$  covered tandem cell.