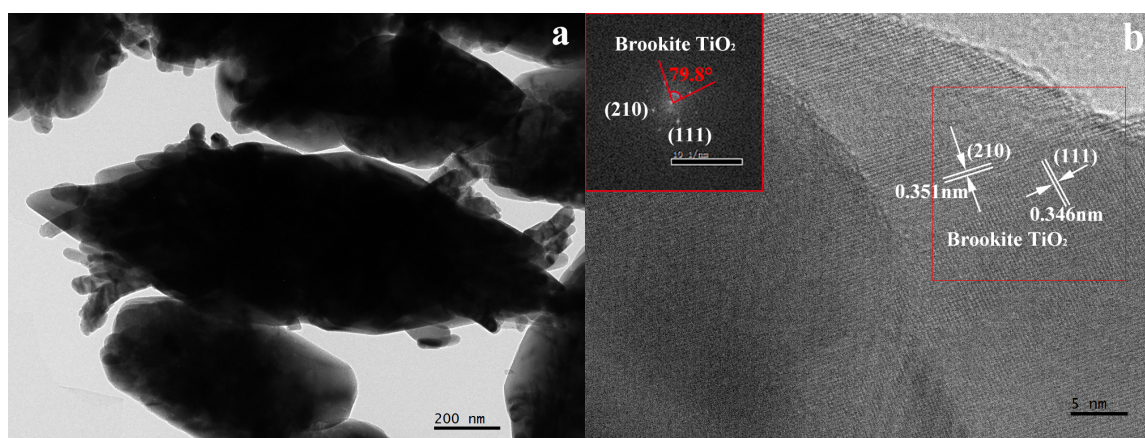


## Supporting Information

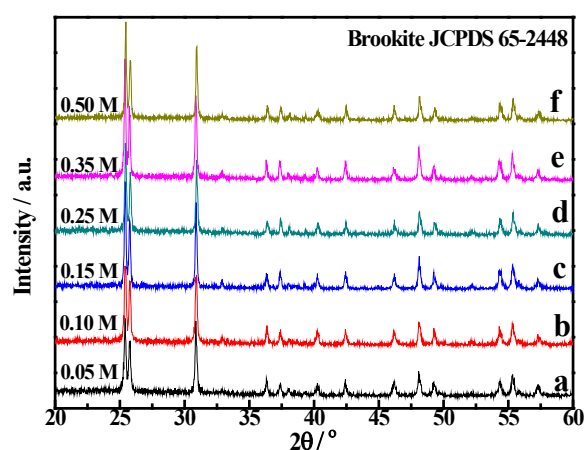
# Synthesis of Size Controllable and Thermal Stable Rice-Like Brookite Titania and Its Application as Scattering Layer for Nano-Sized Titania Film-Based Dye-Sensitized Solar Cells

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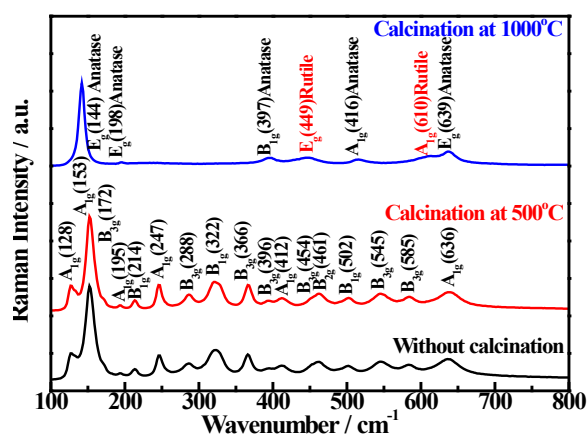


**Figure S1.** Typical TEM (a) and HRTEM (b) images of the products derived from hydrothermal treatment of the  $\text{Ti}(\text{SO}_4)_2$  solution (pH~12.50) at  $240^\circ\text{C}$  for 24 h

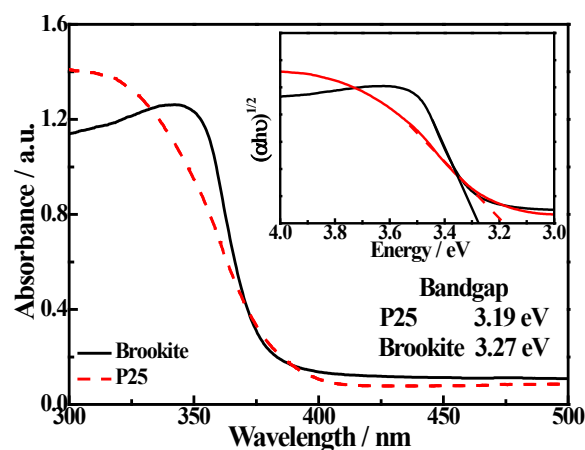


**Figure S2.** XRD patterns of the products derived from hydrothermal treatment at  $240^\circ\text{C}$  for 24 h in the presence of  $\text{Ti}(\text{SO}_4)_2$  solution (pH~12.50) with different concentrations, 0.05M (a), 0.10M (b), 0.15M (c), 0.25M (d), 0.35M (e), and 0.50M (f).

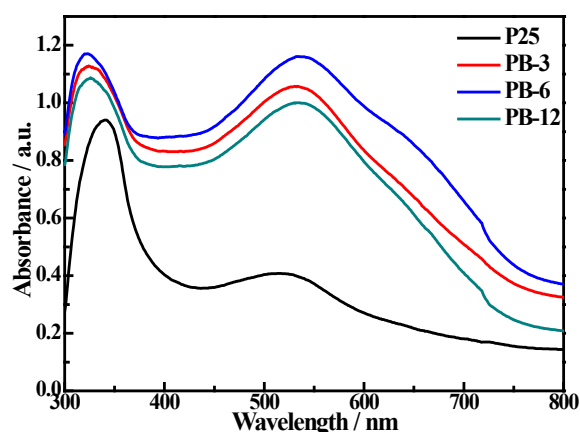
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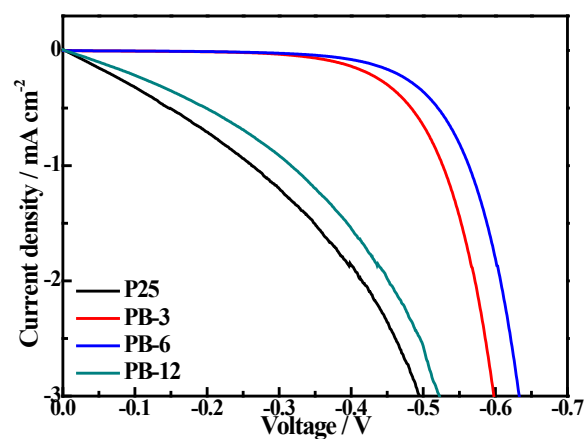
**Figure S3.** Raman patterns of the products derived from hydrothermal treatment of  $\text{Ti}(\text{SO}_4)_2$  solution (pH12.50) at  $240^\circ\text{C}$  for 24 h and calcination at different temperatures



**Figure S4.** UV-Vis diffuse reflectance absorption spectra (DRS) of the brookite  $\text{TiO}_2$  particles and P25 powders.



**Figure S5.** UV-Vis diffused reflectance absorption spectra (DRS) of the P25 film-based photoanode and the bilayer  $\text{TiO}_2$  film-based ones consisting of the P25 underlayer and the overlayer of brookite  $\text{TiO}_2$  particles with different diameters.



**Figure S6.** Dark current curves of the solar cells fabricated with the P25 film-based electrode and the bilayer  $\text{TiO}_2$  film-based ones consisting of the P25 underlayer and the overlayer of brookite  $\text{TiO}_2$  particles with different diameters.