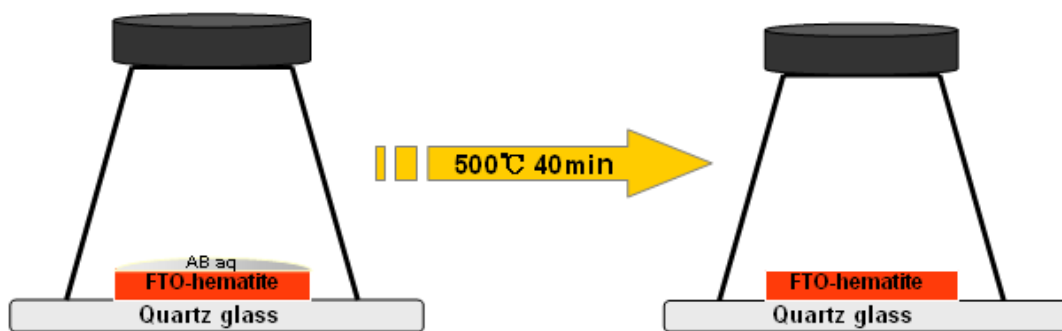


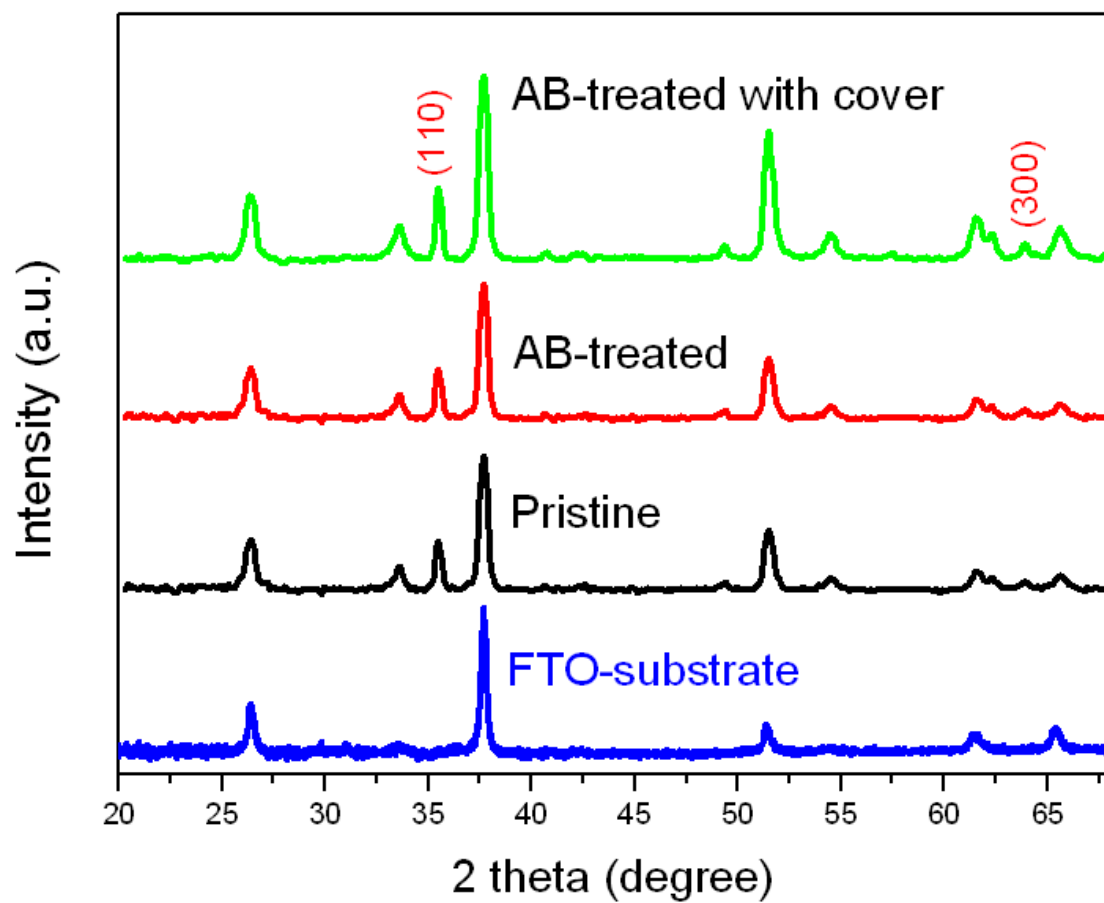
## Supporting information

### **Depth-Reduction Induced Low Onset Potential of Hematite Photoanodes for Solar Water Oxidation**

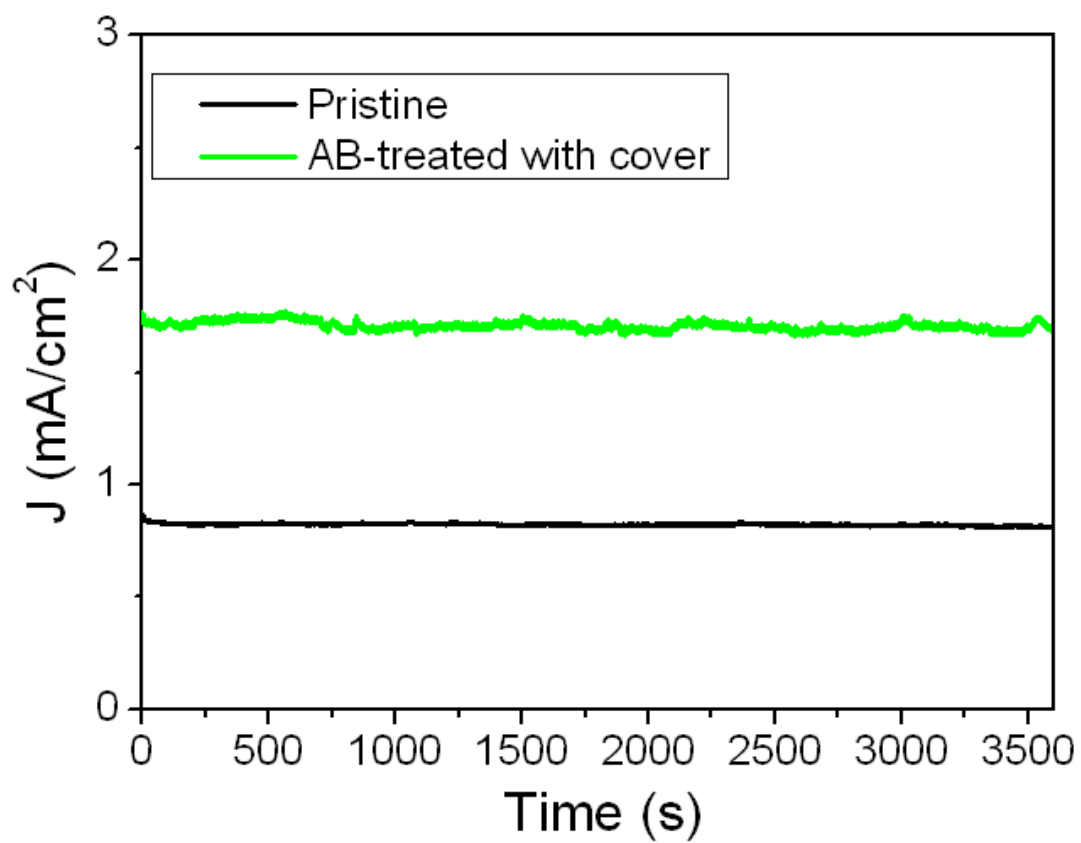
*Yuanyuan Hao, Jiujuun Deng, Litao Zhou, Xuhui Sun and Jun Zhong\**



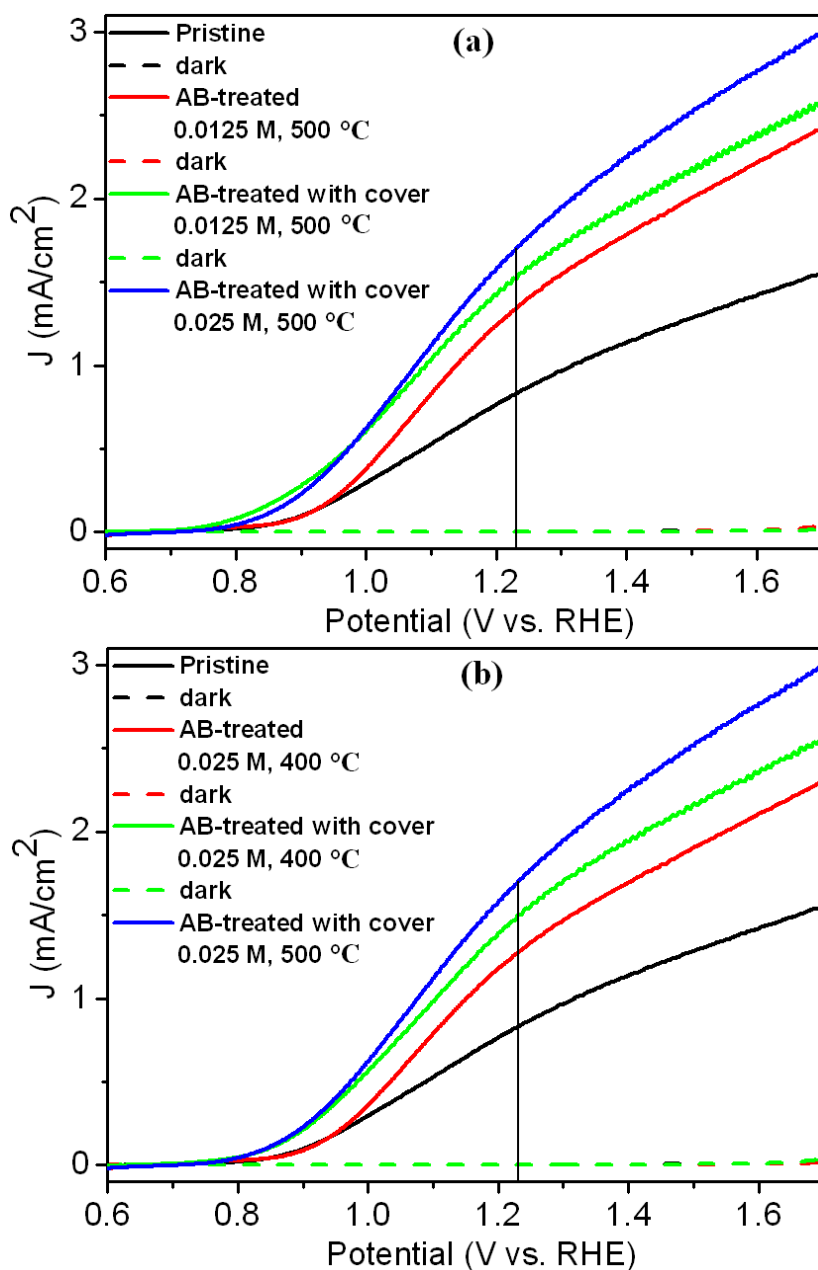
**Figure S1:** Illustration of the experimental setup for AB-treatment with cover.



**Figure S2:** XRD spectra of hematite nanostructures before and after AB-treatment (at an AB concentration of 0.025 M and a temperature of 500 °C).



**Figure S3:** Photochemical stability curves for pristine and AB-treated (with cover, 0.025 M and 500 °C) hematite electrodes collected at 1.23 V vs. RHE.



**Figure S4:** (a)  $J-V$  scans for pristine and AB-treated (with and without cover) hematite photoanodes at an AB concentration of 0.0125 M and 500 °C. (b)  $J-V$  scans for pristine and AB-treated (with and without cover) hematite photoanodes at an AB concentration of 0.025 M and 400 °C. In both S3a and S3b the curve for AB-treated (with cover) hematite photoanode at an AB concentration of 0.025 M and 500 °C is shown for comparison.