

Pyrite Nanorod Arrays as Efficient Counter Electrode for Dye-Sensitized Solar Cells

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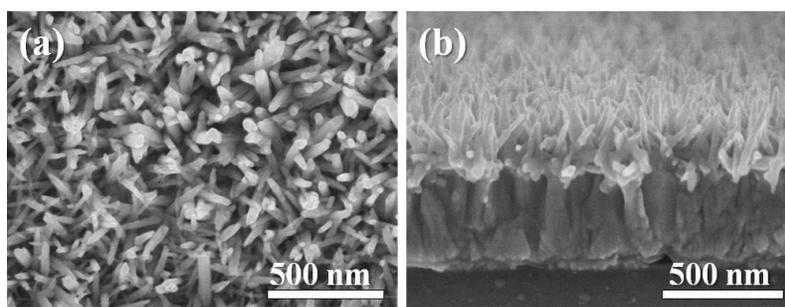


Figure S1. The morphology of the FeOOH nanorod arrays produced by 5 h hydrothermal reaction. (a) Top-view and (b) side-view SEM images.

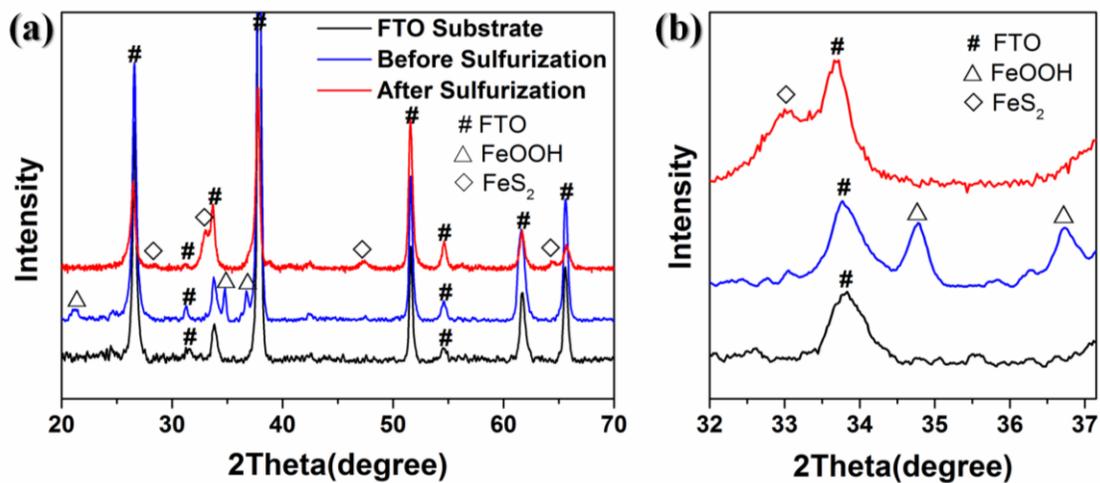


Figure S2. The XRD spectra of FeOOH nanorods and FeS₂ nanorods array on FTO substrate. (a)

Wide-scan survey spectrum for all elements, (b) precise-scan spectrum in 2θ range of 32~37°.

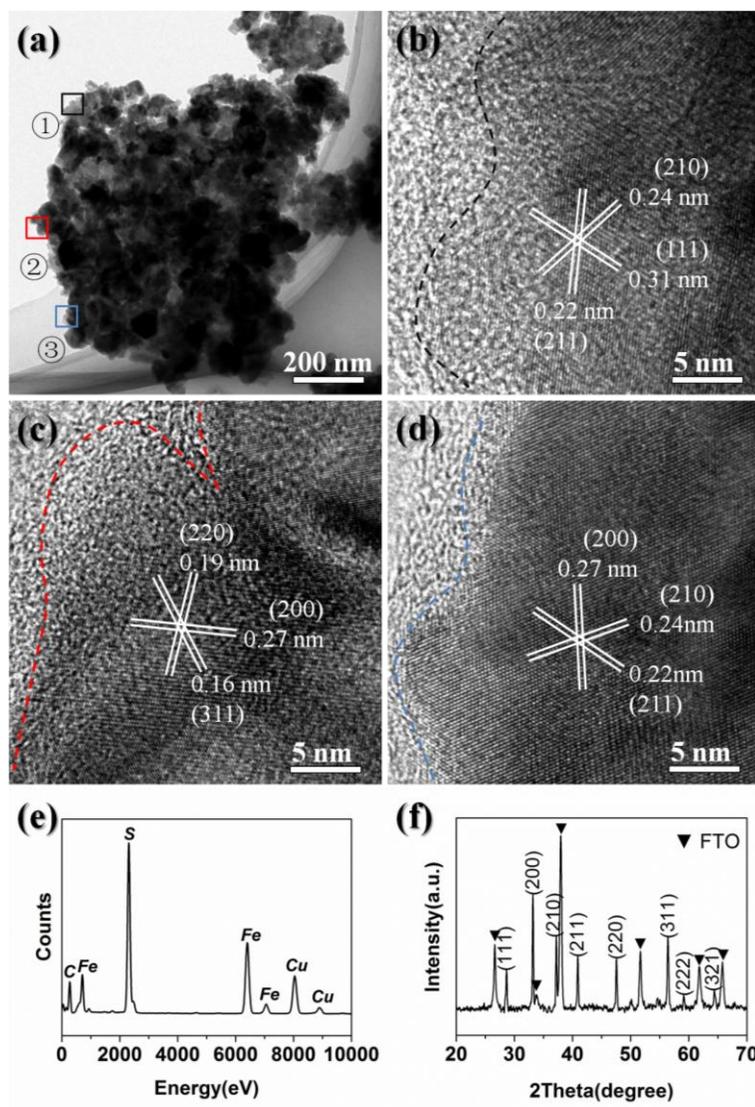


Figure S3. The characterizations of FeS₂ nanoparticle. (a) TEM and (b)&(c)&(d) HRTEM images, (e) EDS spectrum, (f) XRD pattern (with FTO substrate).

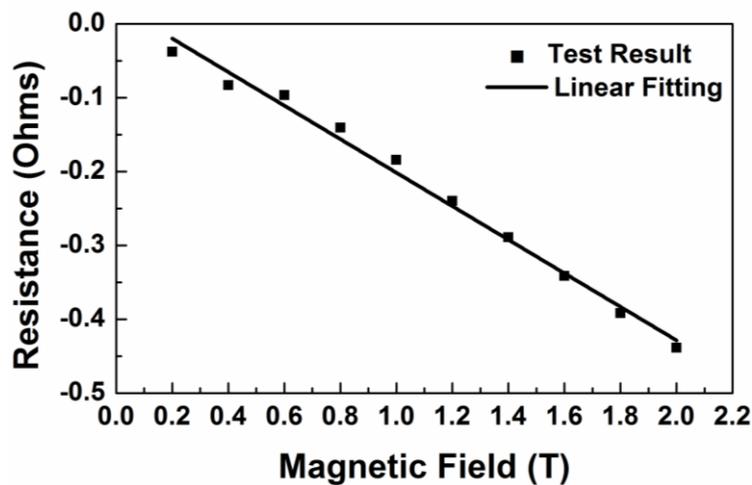


Figure S4. Hall Effect measurements of FeS₂ nanorod arrays, the slope of the pattern is 2.27×10^{-4} Ohm/T.

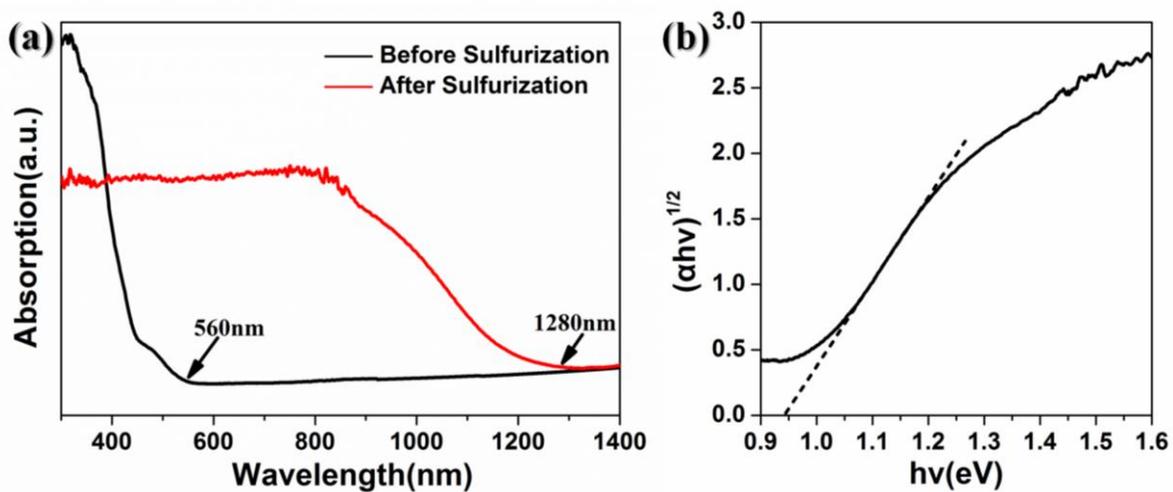


Figure S5. Absorption properties of FeOOH and FeS₂ nanorod arrays. (a) UV-Vis absorption spectra of FeOOH and FeS₂ nanorods arrays. (b) $(\alpha h\nu)^{1/2}$ - $h\nu$ plot of FeS₂ nanorods array.

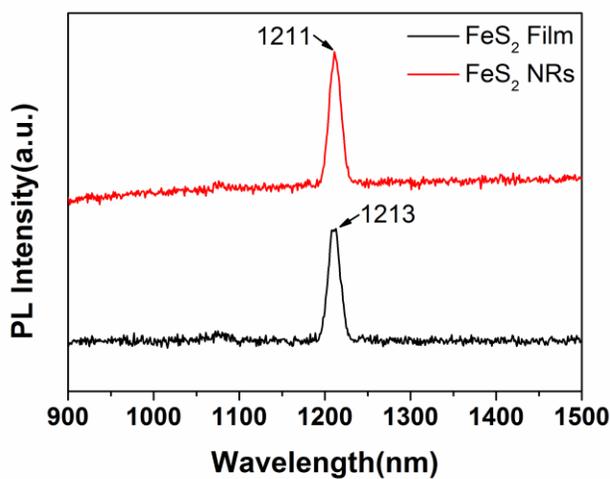


Figure S6. Photoluminescence spectra of the as-prepared FeS₂ nanostructures.

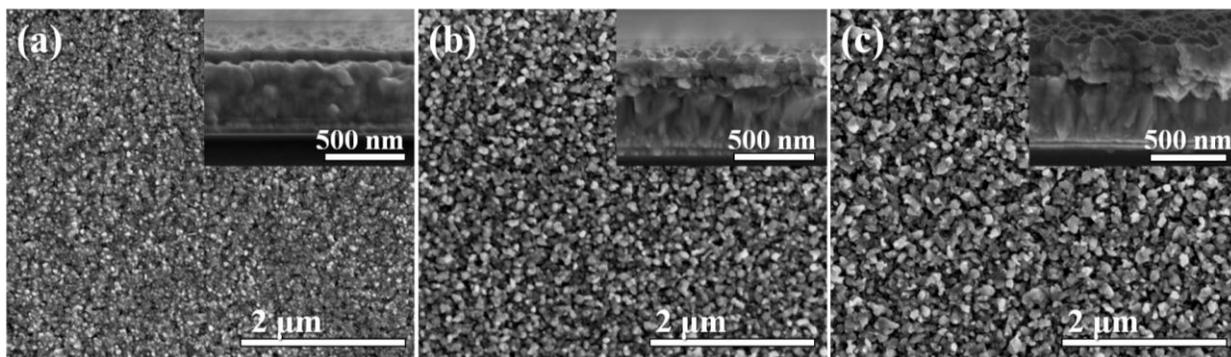


Figure S7. SEM images of FeS₂ films with different thicknesses. (a) 100 nm, (b) 200 nm and (c) 400 nm. The insets are the corresponding cross-sectional images.

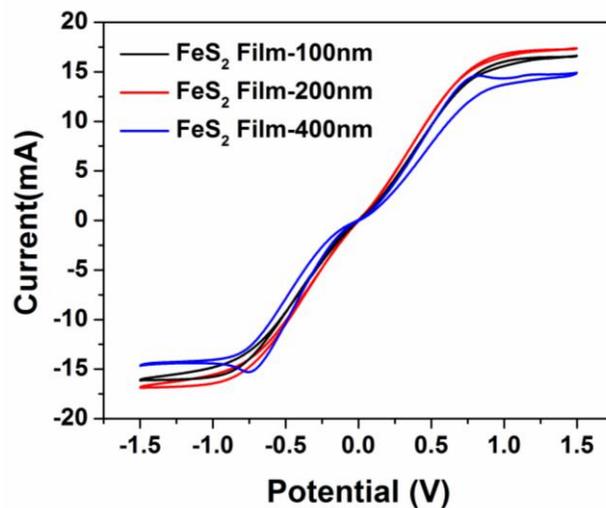


Figure S8. CV plots of FeS₂ films with different thicknesses.

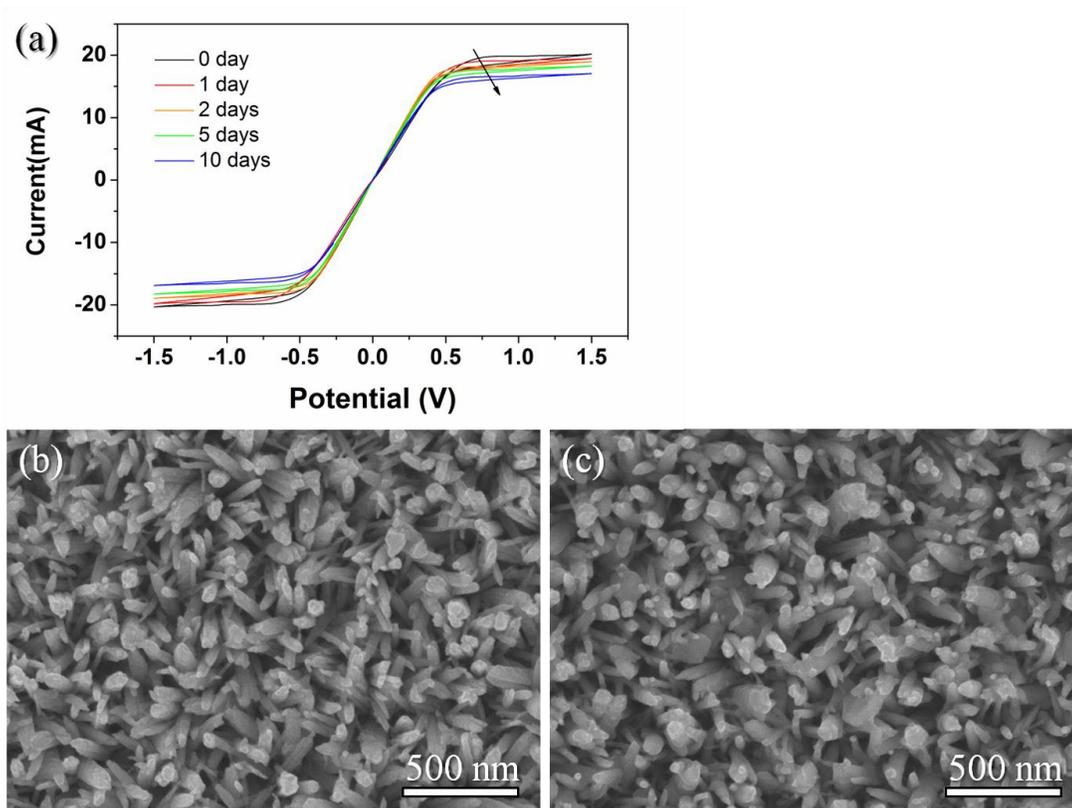


Figure S9. Stability of FeS₂ NR arrays in iodide electrolyte. (a) CV plots of FeS₂ NR arrays at different aging times. SEM images of (b) as-prepared FeS₂ NR arrays and (c) those being soaked in electrolyte for 10 days.