Electronic Supporting Information

Modification of Hematite Photoanode with Cobalt Based Oxygen Evolution Catalyst via Bifunctional Linker Approach for Efficient Water Splitting

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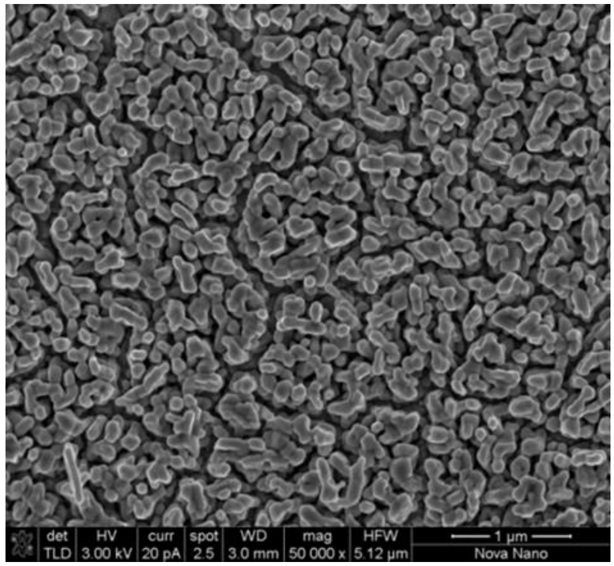

Figure S1. SEM image of hematite film.

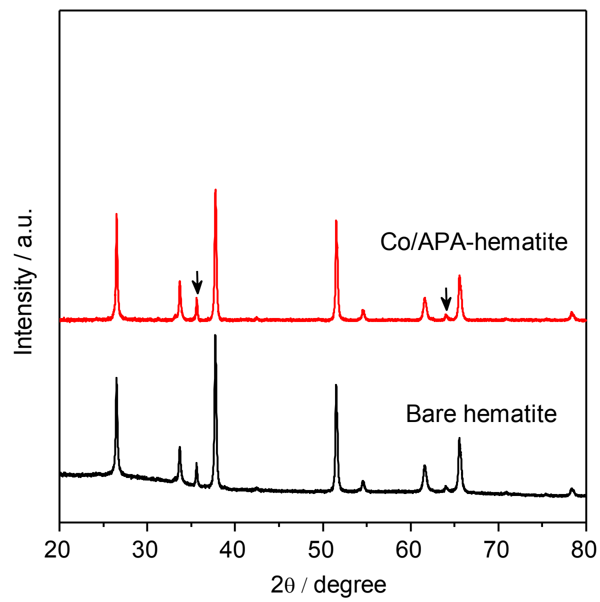

Figure S2. XRD diffraction patterns of bare- and Co/APA-hematite photoanodes. The arrow symbol indicates Bragg positions located at 35.7 and 64.05° (2θ) for (110) and (300) diffraction peaks of hematite, respectively, according to the JCPDS card no. 033-0664. The other peaks indicate Bragg positions for FTO layer on the glass substrate according to the JCPDS card no. 041-1445.

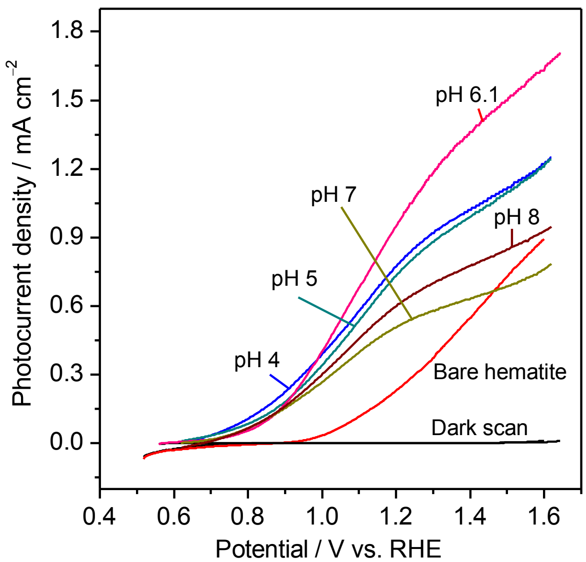

Figure S3. I−V curves for photoelectrochemical water oxidation on bare- and Co/APA-hematite photoanodes measured under simulated solar light (1 sun, AM 1.5G) from 1.0 mol L^{-1} NaOH solution. Modification conditions: hematite films were immersed in 10 mmol L^{-1} APA aqueous solutions for 120 min at different pH values followed by soaking in 5 mmol L^{-1} cobalt nitrate aqueous solution for 60 min.

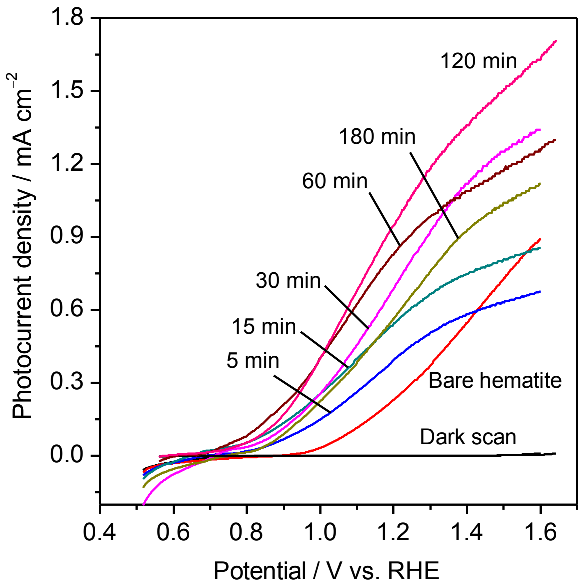

Figure S4. I−V curves for photoelectrochemical water oxidation on bare- and Co/APA-hematite photoanodes measured under simulated solar light (1 sun, AM 1.5G) from 1.0 mol L^{-1} NaOH solution. Modification conditions: hematite films were immersed in 10 mmol L^{-1} APA aqueous solutions for different time (5 – 180 min) at pH 6.1 followed by soaking in 5 mmol L^{-1} cobalt nitrate aqueous solution for 60 min.

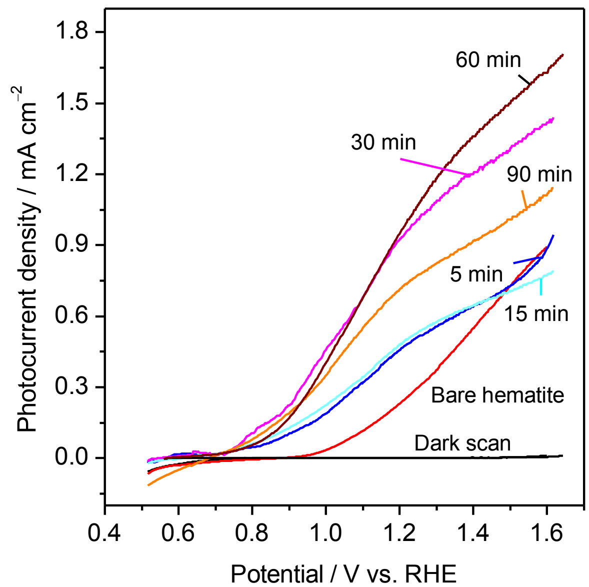

Figure S5. I−V curves for photoelectrochemical water oxidation on bare- and Co/APA-hematite photoanodes measured under simulated solar light (1 sun, AM 1.5G) from 1.0 mol L^{-1} NaOH solution. Modification conditions: hematite films were immersed in 10 mmol L^{-1} APA aqueous solutions for 120 min at pH 6.1 followed by soaking in 5 mmol L^{-1} cobalt nitrate aqueous solution for different time periods (5 – 90 min).

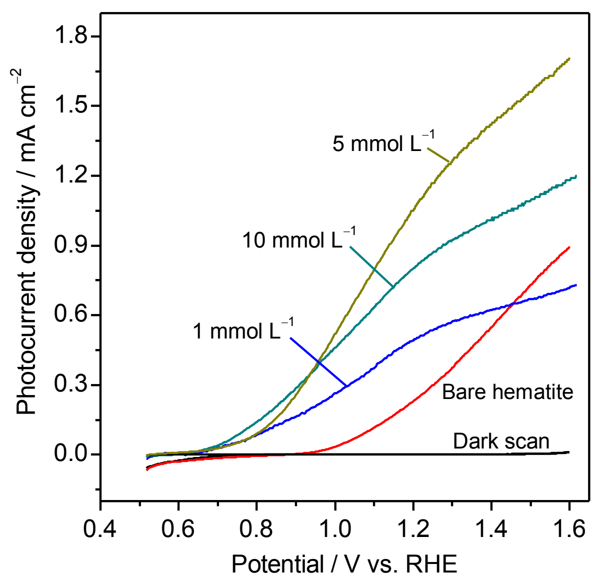

Figure S6. I−V curves for photoelectrochemical water oxidation on bare- and Co/APA- hematite photoanodes measured under simulated solar light (1 sun, AM 1.5G) from 1.0 mol L^{-1} NaOH solution. Modification conditions: hematite films were immersed in 10 mmol L^{-1} APA aqueous solutions for 120 min at pH 6.1 followed by soaking in different concentrations of cobalt nitrate aqueous solution for 60 min.

End of Electronic Supporting Information