Supporting Information

Boron-Passivated Surface Fe^(IV) Defects in Hematite for Highly Efficient Water Oxidation

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Figure S1: Experimental illustration of B-modified hematite (B-Fe₂O₃).



Figure S2: XRD spectra of Fe₂O₃ and B-Fe₂O₃.



Figure S3: (a) *J-V* scans of the pristine and B-treated Fe_2O_3 photoanodes at different concentrations of H_3BO_3 . (b) *J-V* scans of the pristine and B-treated (1 M H_3BO_3) Fe_2O_3 photoanodes with different treating times.



Figure S4: *J-V* scans of the pristine sample and the samples treated with various acids.



Figure S5: Experimental illustration of B and Ti modified hematite (B-Ti-Fe₂O₃).



Figure S6: SEM images of (a) Fe_2O_3 and (b) B-Ti-Fe_2O_3, respectively. SEM cross section images of (c) Fe_2O_3 and (d) B-Ti-Fe_2O_3, respectively.



Figure S7: Ti *L*-edge XAS spectra of Fe₂TiO₅ and B-Ti-Fe₂O₃.



Figure S8: Mott-Schottky plots of Fe₂O₃, B-Fe₂O₃ and B-Ti-Fe₂O₃.



Figure S9: (a) XPS survey spectra of Fe₂O₃, B-Fe₂O₃ and B-Ti-Fe₂O₃. (b)-(d): High-resolution XPS spectra at the Fe 2p, Ti 2p and B 1s edges, respectively.



Figure S10: Fe *L*-edge XAS spectra of Fe₂O₃ and B-Fe₂O₃.