

Supporting information

Enhanced Photoelectrochemical Water Oxidation Performance by Altering Interfacial Charge Transfer path

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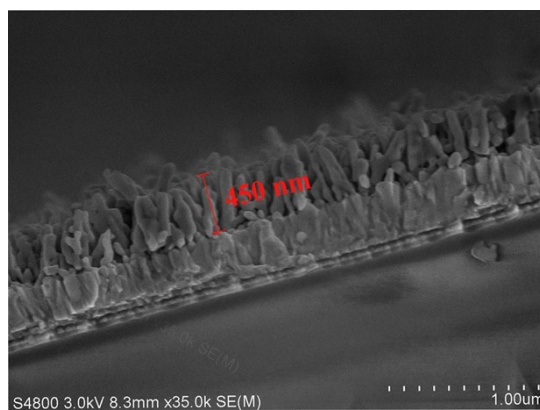


Figure S1 Cross-sectional SEM of Ti-doped Fe_2O_3 photoanode.

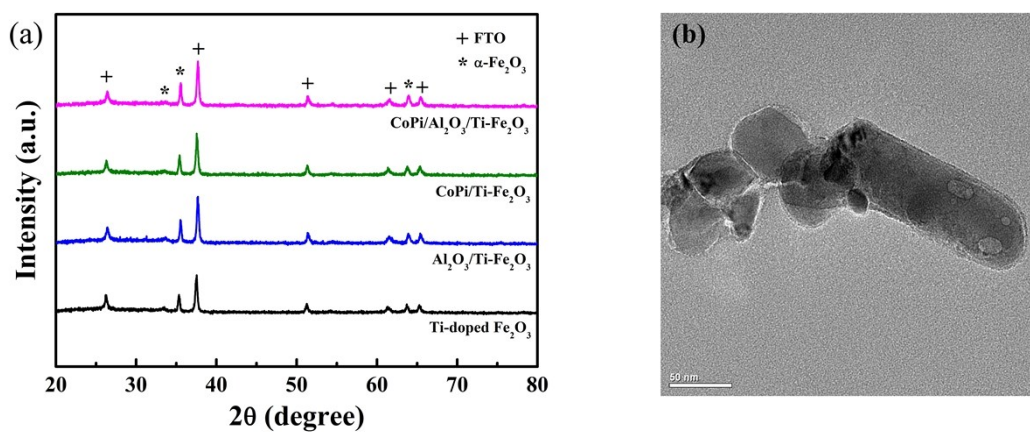


Figure S2 (a) X-ray diffraction patterns of Ti-doped Fe_2O_3 , $\text{Al}_2\text{O}_3/\text{Ti-Fe}_2\text{O}_3$, $\text{CoPi}/\text{Ti-Fe}_2\text{O}_3$ and $\text{CoPi}/\text{Al}_2\text{O}_3/\text{Ti-Fe}_2\text{O}_3$. (b) TEM images of $\text{CoPi}/\text{Al}_2\text{O}_3/\text{Ti-Fe}_2\text{O}_3$.

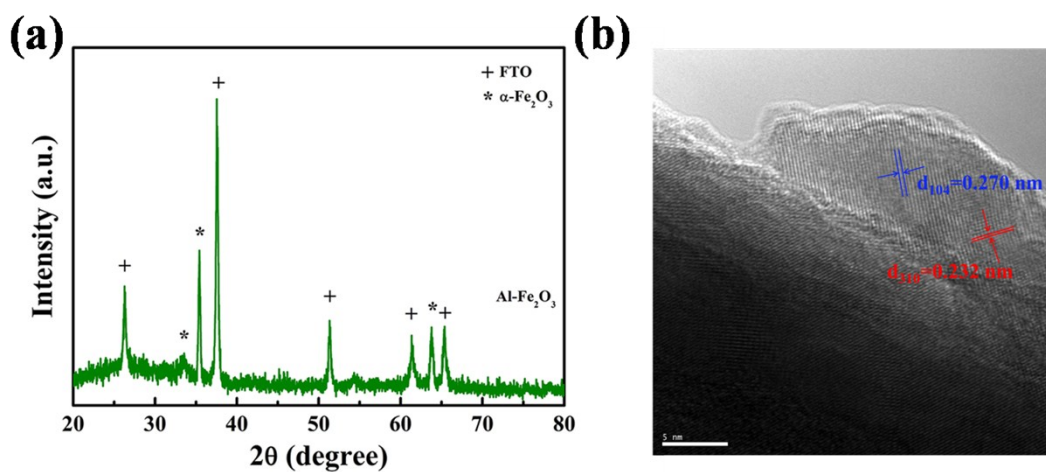


Figure S3 (a) X-ray diffraction patterns and (b) HRTEM images of Ti-doped Fe_2O_3 surface treatment in the solution containing Al^{3+} more times by the same method.

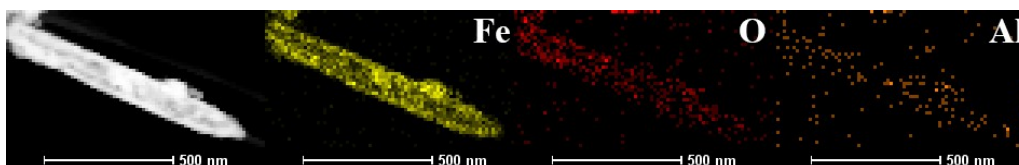


Figure S4 Elemental mapping of Fe, O and Al for Ti-doped Fe_2O_3 surface treatment in the solution containing Al^{3+} more times by the same method.

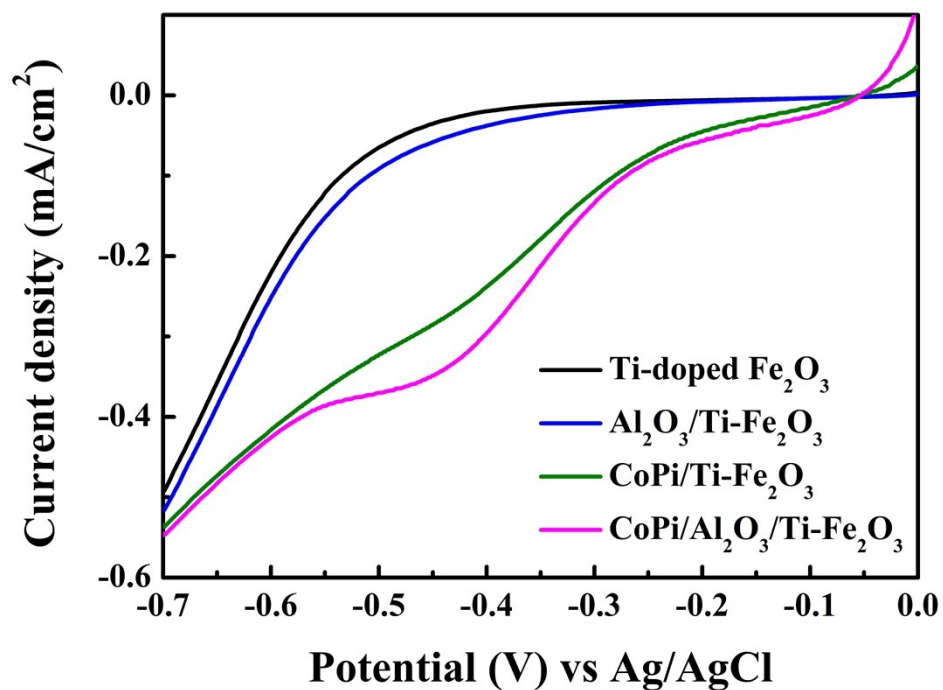


Figure S5 Cathodic currents in the dark collected for Ti-doped Fe_2O_3 , $\text{Al}_2\text{O}_3/\text{Ti-Fe}_2\text{O}_3$, $\text{CoPi}/\text{Ti-Fe}_2\text{O}_3$ and $\text{CoPi}/\text{Al}_2\text{O}_3/\text{Ti-Fe}_2\text{O}_3$.

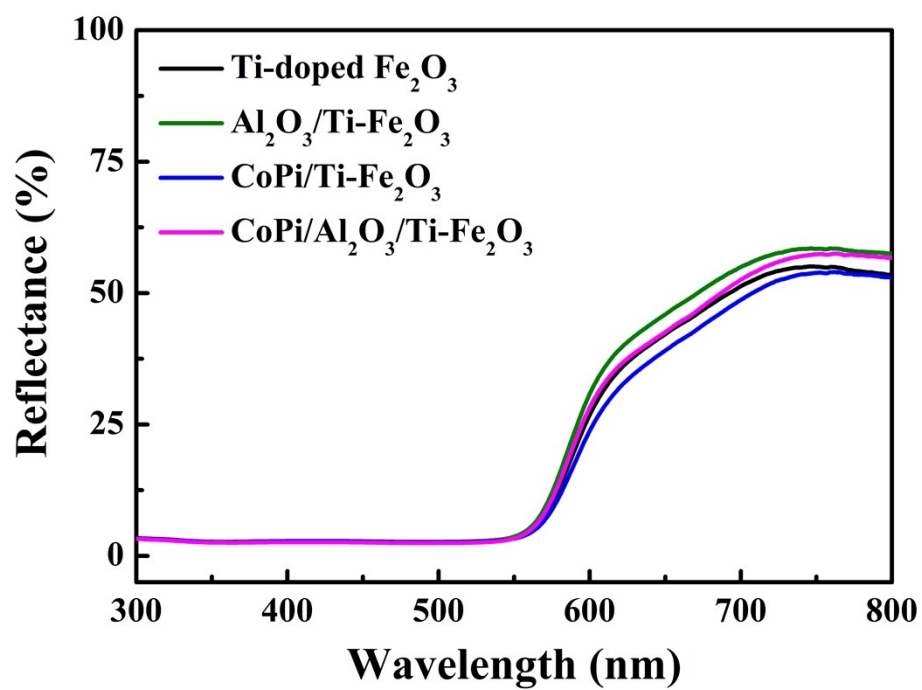


Figure S6 UV-vis diffuse reflectance spectra of Ti-doped Fe₂O₃, Al₂O₃/Ti-Fe₂O₃, CoPi/Ti-Fe₂O₃ and CoPi/Al₂O₃/Ti-Fe₂O₃.