Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary Information for:

Bandgap engineering of Fe_2O_3 with Cr – Application to photoelectrochemical oxidation

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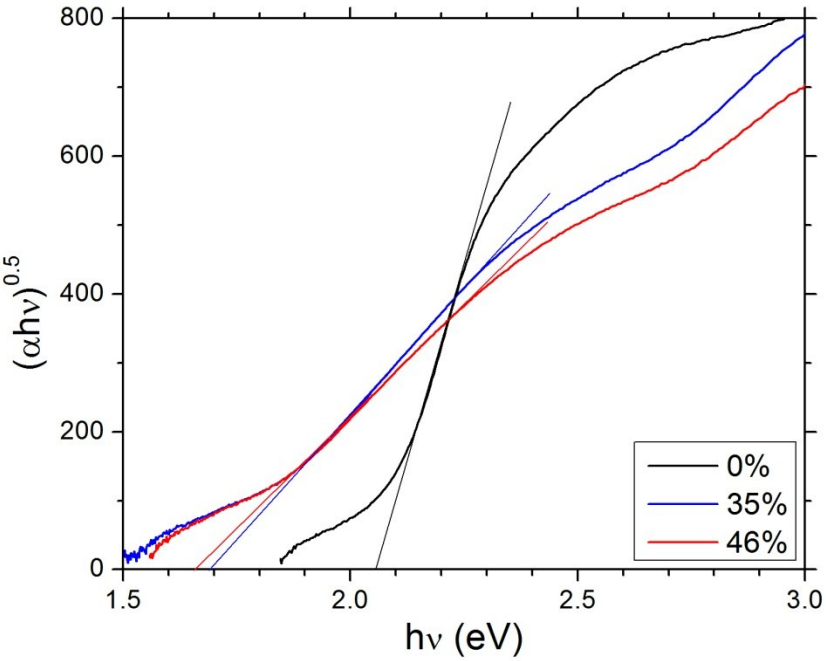
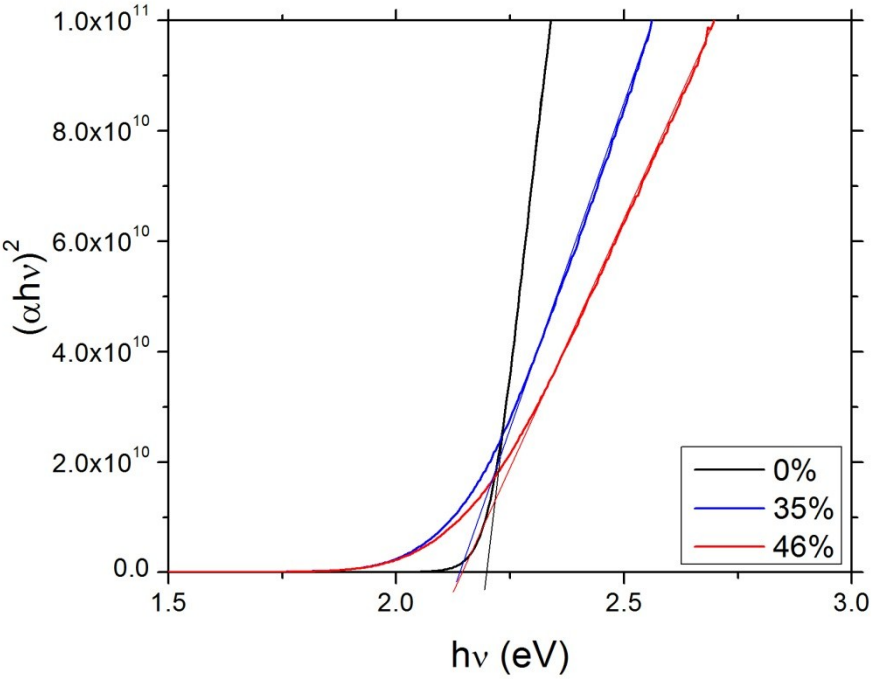


Figure S1. Indirect gap Tauc analysis for a few Cr-doped films.

Figure S2. Direct gap Tauc analysis for a few Cr-doped films.



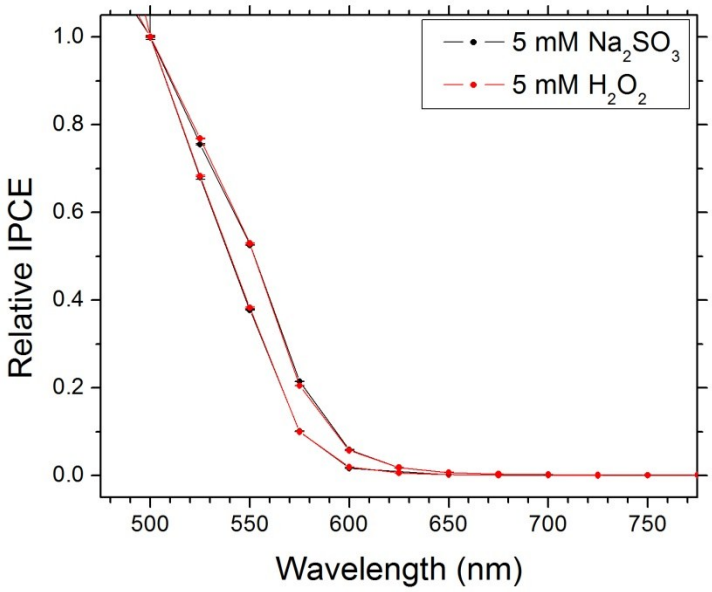


Figure S3. Comparison of relative IPCE traces for two different films using either Na_2SO_3 or H_2O_2 as the hole scavenger. As can be seen they almost lay right on top of each other so either scavenger is appropriate for use. Na_2SO_3 was chosen because it gave lower dark currents.

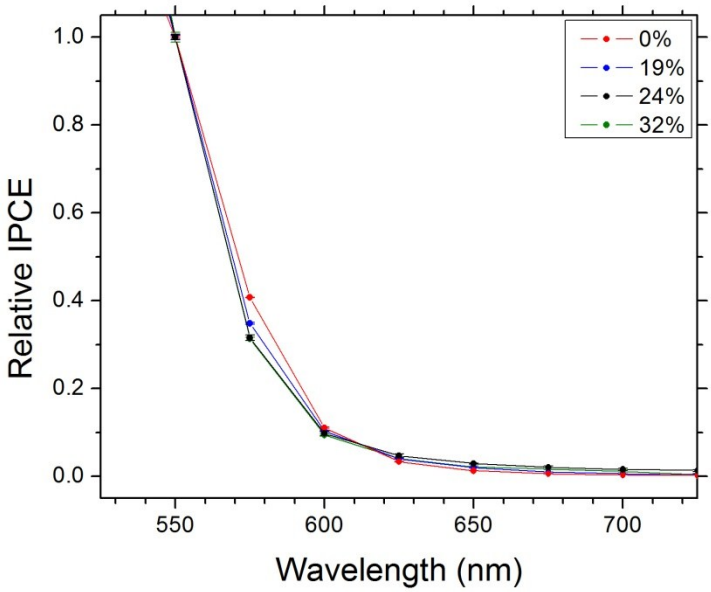


Figure S4. Relative IPCE plot of same films see in Figure 4, but instead of 500 nm response used for normalization the 550 nm response is used.

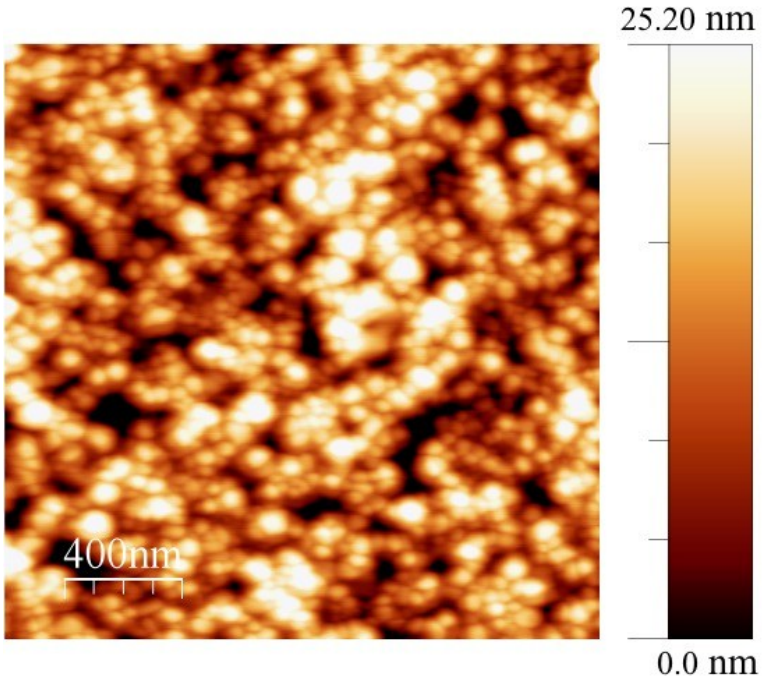


Figure S5. AFM image of polycrystalline Fe_2O_3 on FTO used for IPCE measurements.

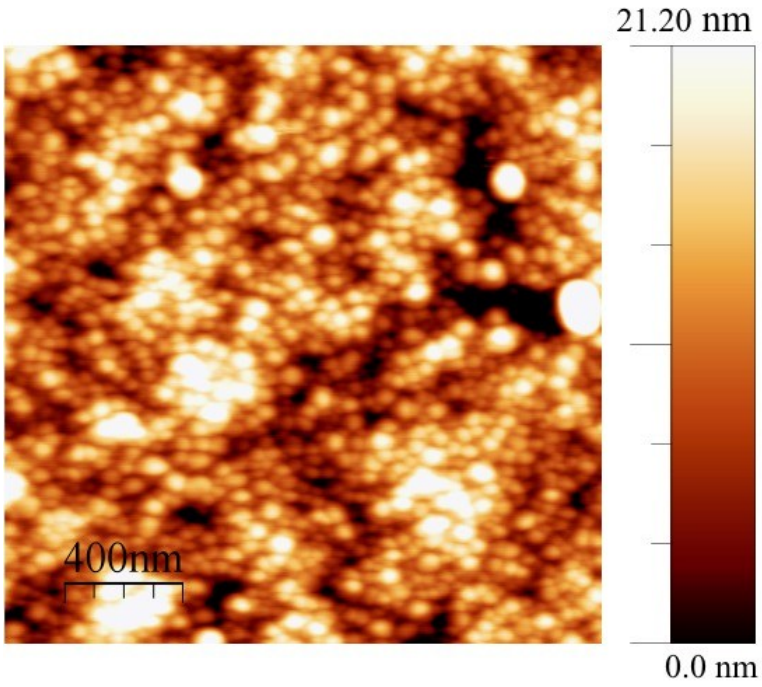


Figure S6. AFM image of polycrystalline $Fe_{1.6}Cr_{0.4}O_3$ on FTO used for IPCE measurements.