

Supplementary Materials: Thin-Film Nanocrystalline Zinc Oxide Photoanode Modified with CdO in Photoelectrocatalytic Degradation of Alcohols

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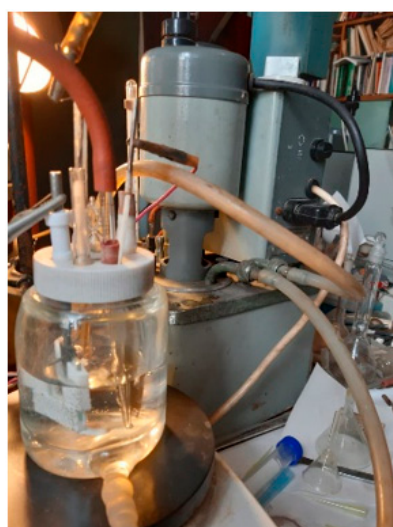


Figure S1. Three-electrode electrochemical cell used for deposition of ZnO and CdO on FTO-coated glass slide. Part of the FTO slide, which is not intended for oxide deposition, is isolated by a Teflon frame.

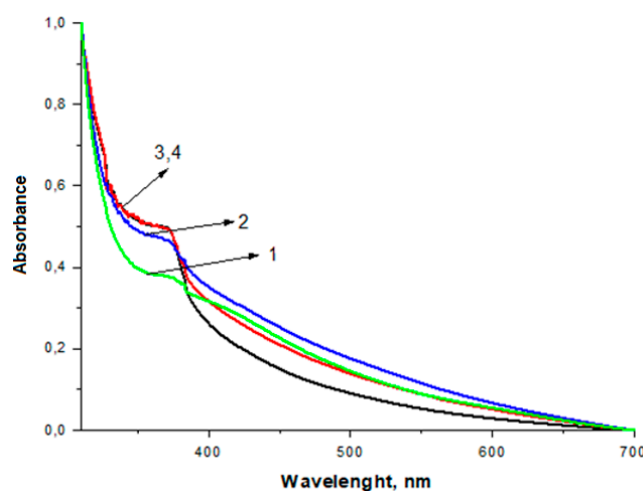


Figure S2. Normalized to [0, 1] absorption spectra for film photoanodes: (1) ZnO/FTO; (2) ZnO/(0.8C)CdO/FTO; (3) ZnO/(0.05C)CdO/FTO; (4) ZnO/(0.1C)CdO/FTO.

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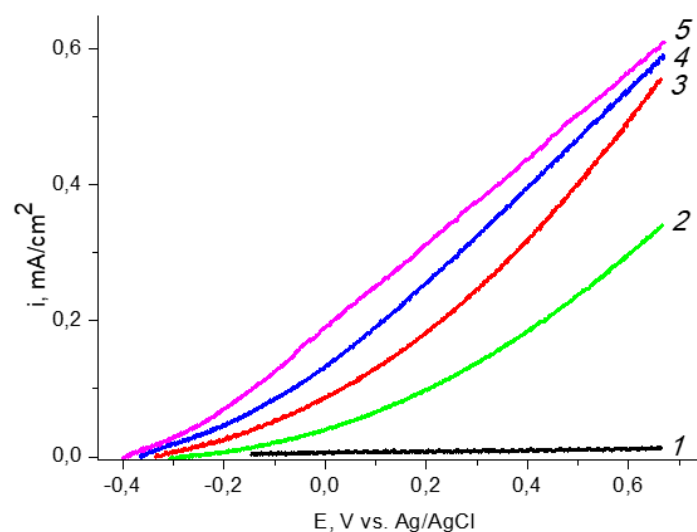


Figure S3. Voltammograms of a ZnO/(0.8C)CdO/FTO film photoanode obtained: (1) in dark conditions, and (2 - 5) under visible light illumination with a power density of 100 mW cm^{-2} in aqueous solutions of (2) $0.5 \text{ M Na}_2\text{SO}_4$; (3) $0.5 \text{ M Na}_2\text{SO}_4 + 20\% \text{ CH}_3\text{OH}$; (4) $0.5 \text{ M Na}_2\text{SO}_4 + 20\% \text{ C}_2\text{H}_4(\text{OH})_2$; and (5) $0.5 \text{ M Na}_2\text{SO}_4 + 20\% \text{ C}_3\text{H}_5(\text{OH})_3$. Potential scan rate is 10 mV s^{-1} . The dark curves for all solutions practically coincide.

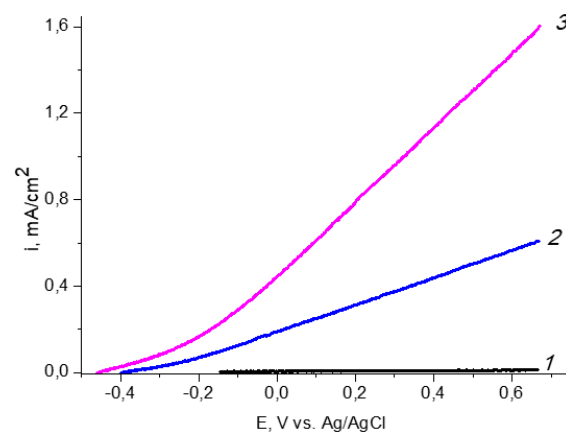


Figure S4. Voltammograms obtained for film photoanodes in: (1) dark conditions, (2) ZnO/(0.8)CdO/FTO (3) ZnO/(0.05)CdO/FTO in aqueous solutions of $0.5 \text{ M Na}_2\text{SO}_4 + 20\% \text{ C}_3\text{H}_5(\text{OH})_3$ (2-3) under visible light illumination with a power density of 100 mW cm^{-2} . Potential scan rate is 10 mV s^{-1} . The dark curves for two films practically coincide.

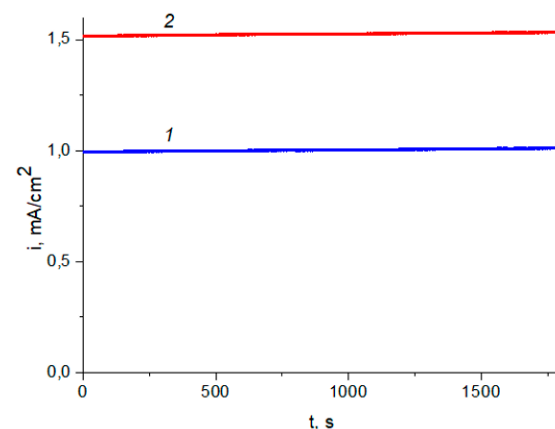


Figure S5. I-t curves of film photoanode ZnO/(0.05)CdO/FTO at various bias potentials (1) 0.4 V and (2) 0.62 V vs. Ag/AgCl in $0.5 \text{ M Na}_2\text{SO}_4 + 20\% \text{ C}_3\text{H}_5(\text{OH})_3$ under visible light illumination with a power density of 100 mW cm^{-2} .

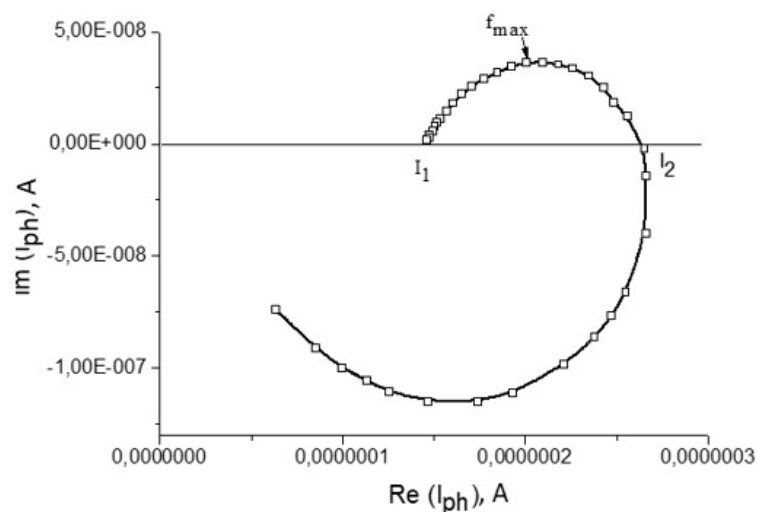


Figure S6. IMPS dependence for a ZnO/(0.05C)CdO/FTO film photoanode illuminated with monochromatic light 407 nm wavelength in 0.5 M Na₂SO₄; illumination power density 14 mW cm⁻²; photoanode potential 0.57 V.

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