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Spin-Coated vs. Electrodeposited Mn Oxide Films as Water Oxidation Catalysts

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## Supplementary Materials: Spin-Coated vs. Electrodeposited Mn Oxide Films as Water Oxidation Catalysts

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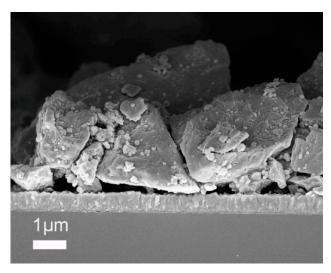
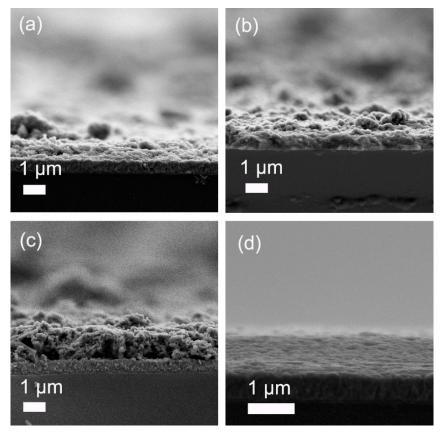
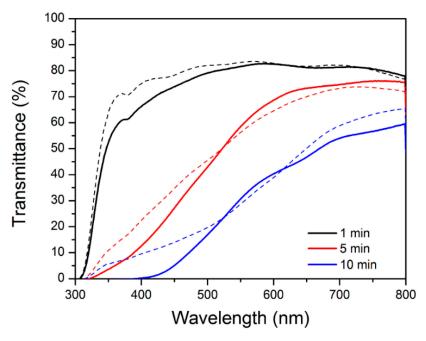


Figure S1. Cross-section FE-SEM image of a spin-coated film made with a non-ball-milled Mn<sub>2</sub>O<sub>3</sub> powder.



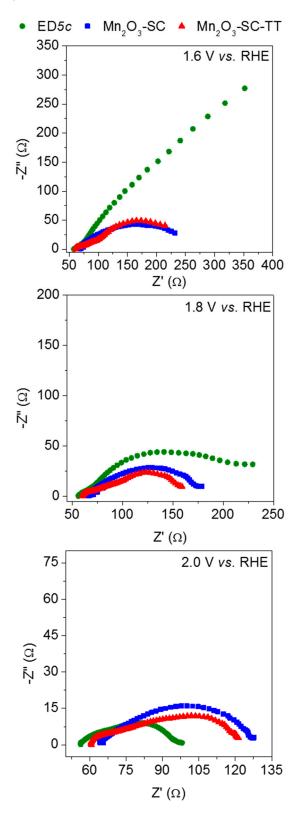
**Figure S2.** FE-SEM cross-section images of the films prepared by spin-coating of  $MnO_2$  (**a**);  $Mn_2O_3$  (**b**) and  $Mn_3O_4$  (**c**) powders; as-made electrodeposited 5-min film (**d**).



**Figure S3.** UV-Vis transmittance spectra of the electrodeposited films: as-made (continuous line) and calcined at  $500 \,^{\circ}$ C (dotted line).



Figure S4. Photographs of the as-made films prepared by electrodeposition at different deposition times.



**Figure S5.** Nyquist plots of the EIS measurements acquired using the  $\alpha$ -Mn<sub>2</sub>O<sub>3</sub>-based electrodes at 1.6, 1.8 and 2.0 V vs. RHE.