Quasi-1D Hyperbranched WO$_3$ Nanostructures for Low Voltage Photoelectrochemical Water-Splitting

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SUPPORTING INFORMATION

Figure S1. Power efficiency curves of the HYP (a) and HIE (b) samples as a function of thickness.

Figure S2. IPCE curves of the HYP (a) and HIE (b) samples as a function of thickness measured by shining light from the glass side and with an applied bias of 1 V vs RHE.
Figure S3. Chronoamperometry of the 5-μm-thick HYP sample performed for 6 hours under standard AM 1.5G illumination with the sample immersed in an aqueous solution of 1 M sulfuric acid (H₂SO₄) and with an applied bias of 0.467 V vs RHE.

Figure S4. EIS curves as Nyquist plots of the HYP (a) and HIE (b) samples as a function of thickness measured with an applied bias of 0.7 V vs RHE.
Figure S5. Equivalent circuit employed for the EIS data fitting (a), showing respectively the double layer at the TCO substrate/film interface ($R_{\text{sub}}$ and $C_{\text{sub}}$), the “Bisquert” transmission line element (BISQ.) and the resistance of the electrolytic solution ($R_{\text{sol}}$). Exploded circuit for the “Bisquert” transmission line element (b), showing a repetition of the main circuitual block made by the bulk transport resistance ($R_{\text{tr}}$) and the double layer at the nanoparticles/electrolyte interface ($R_{\text{rec}}$ and $C_{\mu}$).