**ELECTRONIC SUPPLEMENTARY MATERIAL FOR THE ARTICLE:**

**Three-dimensional anodes prepared by β-PbO2 electrodeposition onto reticulated vitreous carbon with different porosities**

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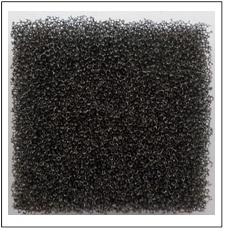
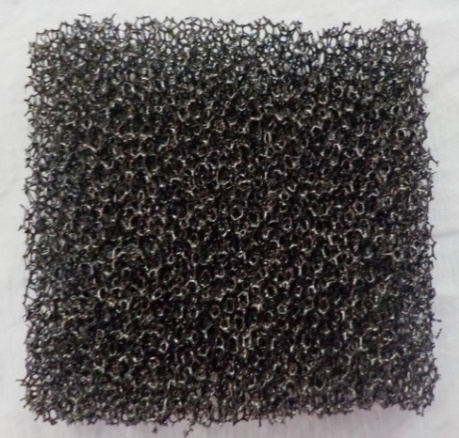


FIG. S1. RVC substrates: (a) 45 ppi, (b) 60 ppi, and (c) 80 ppi (0.5 cm x 2.5 cm x 2.5 cm).



FIG. S2. Schematic representation of the experimental system used for electrodeposition of PbO2: 1) multimeter; 2) current source; 3) peristaltic pump; 4) electrochemical reactor; 5) electrolyte reservoir and magnetic agitator; 6) thermostatically-controlled bath.



FIG. S3. Schematic representation of the experimental system used for dye decolorization: 1) computer; 2) UV-Vis spectrophotometer; 3) peristaltic pump; 4) electrochemical reactor; 5) electrolyte reservoir; 6) multimeter; 7) current source.



FIG. S4. Schematic representation of the electrochemical reactor: 1) current collector, 2) three-dimensional anode, 3) electrolyte flow cannel, 4) polyamide fabric, 5) polyethylene mesh, 6) counter-electrode, and 7) electrolyte inlet.



FIG. S5. Schematic representation of the surface of the RVC/PbO2 electrode analyzed using SEM.



FIG. S6. X-ray diffraction pattern of the PbO2 electrodes deposited on (a) 60 ppi and (b) 45 ppi substrates. *j* = 3.5 mA cm-2.

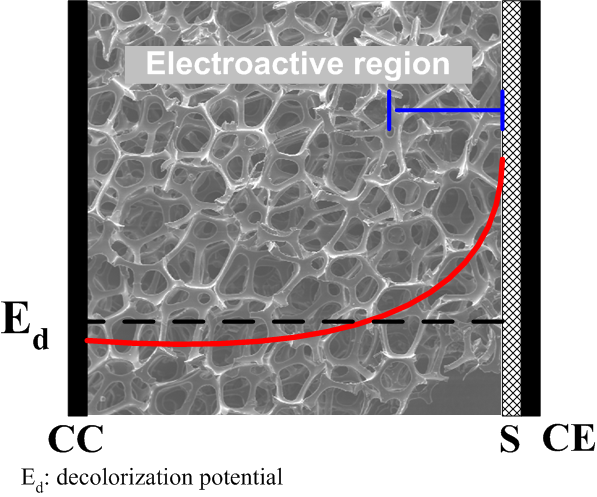
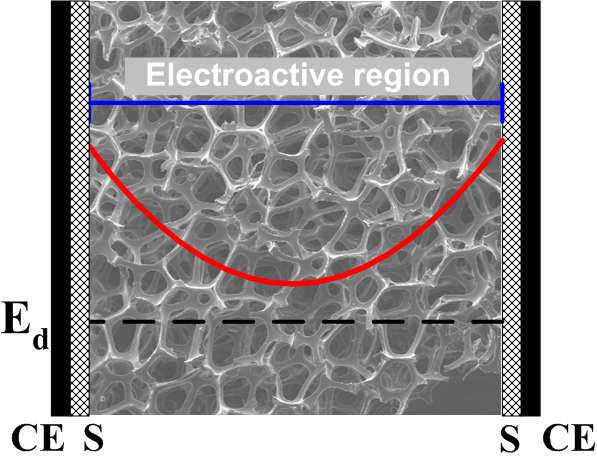
 

(a) (b)

FIG. S7. Photographs of the RVC/PbO2 electrodes obtained applying 5.0 mA cm-2: (a) 60 ppi substrate; (b) 80 ppi substrate.



FIG. S8. Voltammograms of the VC, VC/PbO2, and RVC electrodes Conditions: 0.1 mol L-1 Na2SO4; ν = 50 mV s-1.

(a) (b)

FIG. 9. Schematic representations of the potential distributions in porous electrodes: (a) single counter electrode and (b) two counter electrodes.