Hybrid Energy Storage: High Voltage Aqueous Supercapacitors based on Activated Carbon / Phosphotungstate Hybrid Materials

J. Suárez-Guevara, V. Ruiz and P. Gomez-Romero

Supporting information

---

\( ^{\text{a}} \) Centro de Investigación en Nanociencia y Nanotecnología, CIN2/ICN2 (CSIC). Campus UAB 08193 Bellaterra (Barcelona), Spain. E-mail: vanesa.ruiz@cin2.es pedro.gomez@cin2.es

\( ^{\text{b}} \) MATGAS Research Center. Campus UAB, 08193 Bellaterra (Barcelona), Spain.
Figure Captions

Figure S1.- FTIR spectra of pristine Activated Carbon (AC) and AC-PW$_{12}$ materials prior to electrochemical cycling

Figure S2.- FTIR spectra of pristine Activated Carbon (AC) electrode (middle trace) and the same electrode after repeated cycling as positive electrode in a symmetric AC/AC supercapacitor cell (top trace). The asterisk marks a conspicuous new peak assigned to C=O indicative of carbon oxidation. Remarkably that peak is absent in the corresponding hybrid electrode AC-PW$_{12}$ also cycled similarly as the positive electrode in a symmetric AC-PW$_{12}$/AC-PW$_{12}$ cell.
**Figure S1.** FTIR spectra of pristine Activated Carbon (AC), AC-PW$_{12}$ materials prior to electrochemical cycling and phosphotungstic acid (H$_3$-PW$_{12}$).
Figure S2.- FTIR spectra of pristine Activated Carbon (AC) electrode (middle trace) and the same electrode after repeated cycling as positive electrode in a symmetric AC/AC supercapacitor cell (top trace). The asterisk marks a conspicuous new peak assigned to C=O indicative of carbon oxidation. Remarkably that peak is absent in the corresponding hybrid electrode AC-PW\textsubscript{12} also cycled similarly as the positive electrode in a symmetric AC-PW\textsubscript{12}/AC-PW\textsubscript{12} cell.