Supplementary Information

Facile synthesis of platinum-lead oxide nanocomposite catalyst with high activity and durability for ethanol electrooxidation

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1. Characterization of nm-Pt and nm-PbO_2

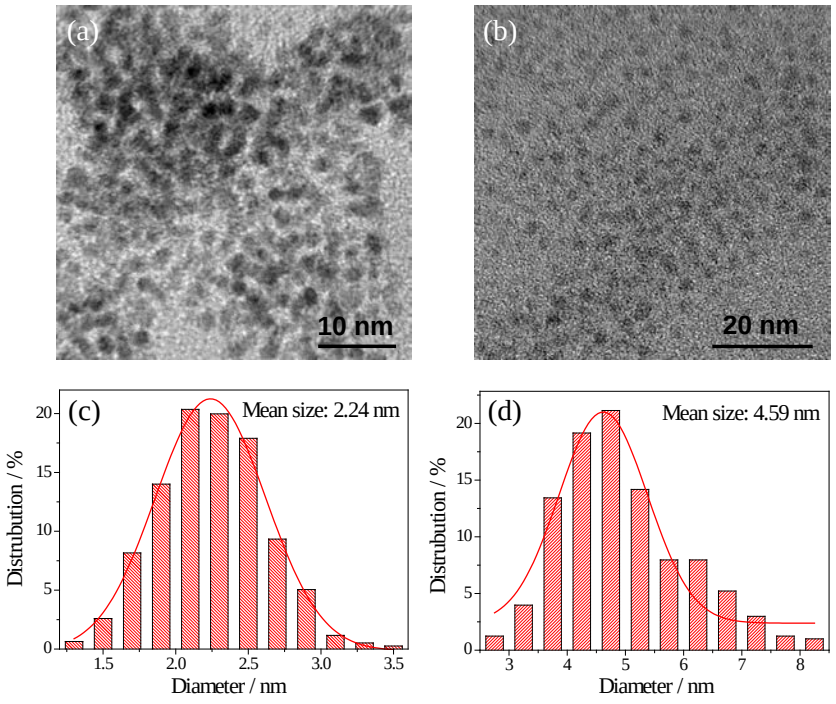

Figure S1. TEM (a, b) and histogram of cross-sectional diameter of nm-Pt and nm-PbO_2 (c, d). a, c nm-Pt; b, d nm-PbO_2

2. Transient current density curves of ethanol oxidation on Pt-PbO_x NC, nm-Pt and Pt black catalysts

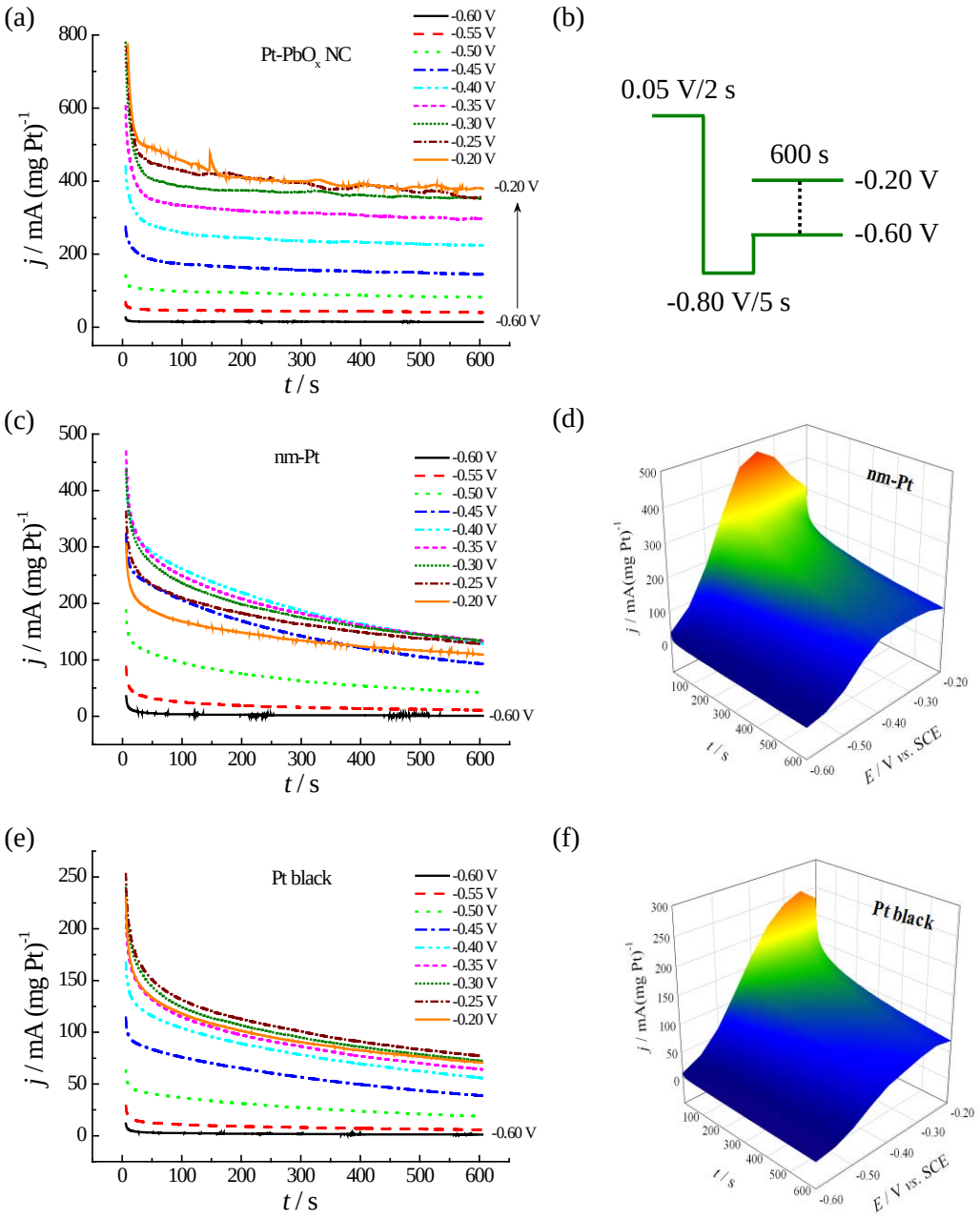

Figure S2. Transient current density curves of ethanol oxidation on Pt-PbO_x NC (a), nm-Pt (c) and Pt black (e) catalysts recorded at different potentials in the range of 0 s to 600 s in a mixture of 0.1 M ethanol and 0.1 M KOH at room temperature. (d) and (f) are the corresponding 3D-plots of *j-t-E* recorded on nm-Pt and commercial Pt black catalysts for ethanol oxidation. (b) Schematic illustration of program potential applied for the electrocatalysis study.

3. Cyclic voltammogram of PbO_2

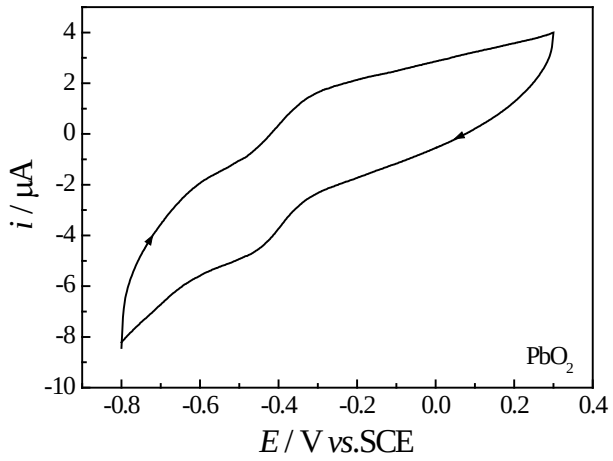

Figure S3. CV plot of ethanol oxidation on pure PbO_2 electrode with a scan rate of 50 mV s^{-1} in a mixture of 0.1 M ethanol and 0.1 M KOH at room temperature.