Supplementary Information (SI)

Dispersion of Ni^{2+} ions via acetate precursor in the preparation of $NaNiPO_4$ nanoparticles: effect of acetate vs. nitrate on the capacitive energy storage properties

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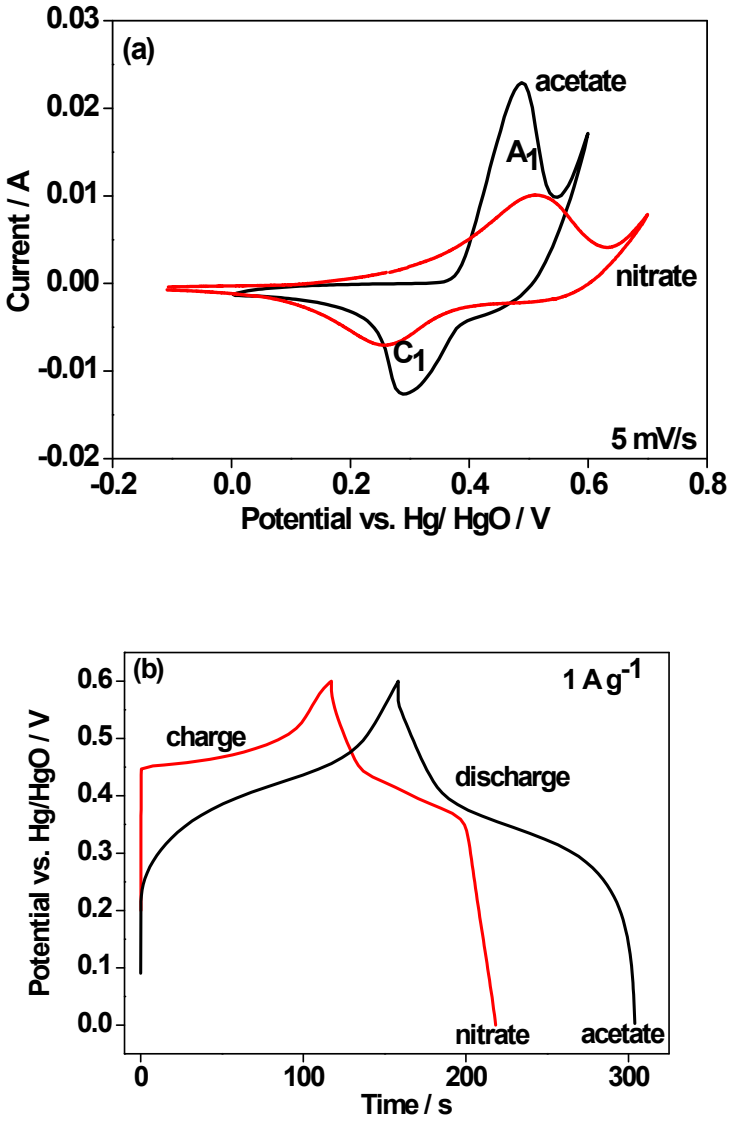

Figure S1 (a) Cyclic voltammetric (CV) and (b) charge-discharge curves (three cell configuration) of positive ($NaNiPO_4$) electrodes exhibiting oxidation (A_1) – reduction (C_1) behaviour in the window of 0.6 V. Acetate-derived material performs better than nitrate.

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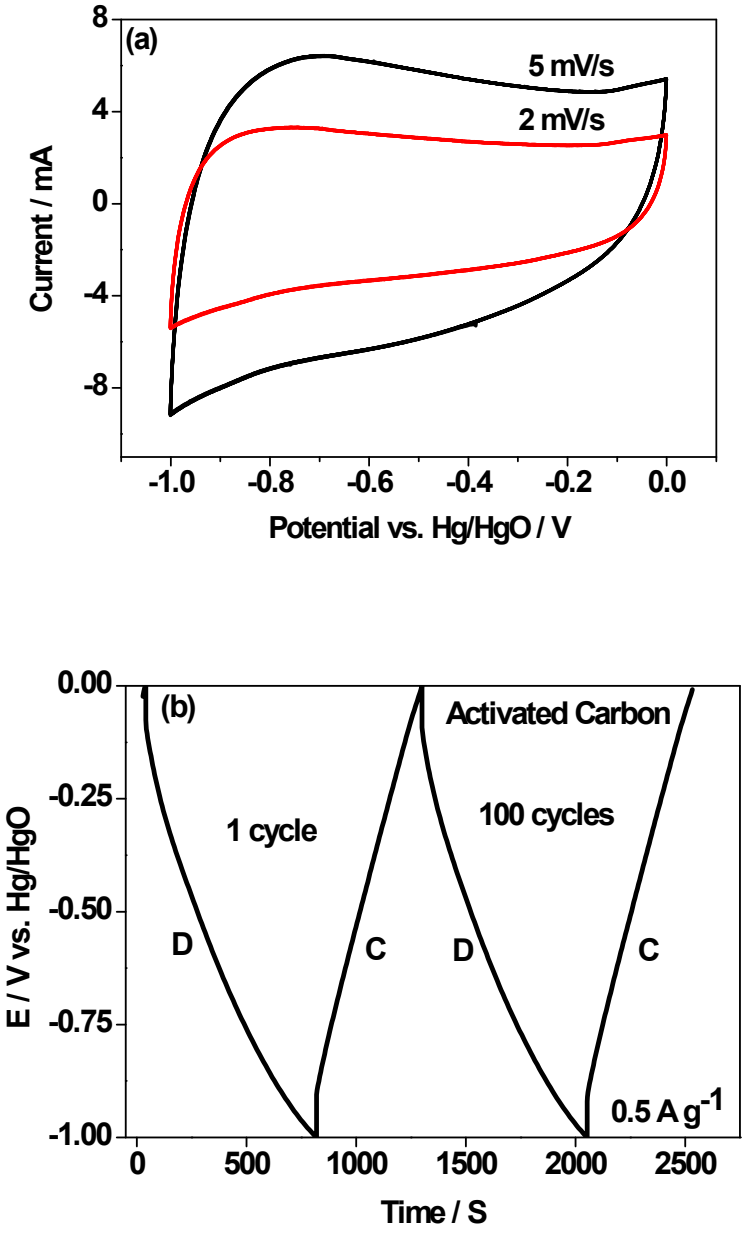

Figure S2 (a) Cyclic voltammetric (CV) and (b) charge-discharge curves (three cell configuration) of negative (activated carbon; AC) electrodes exhibiting box-type curve illustrating non-faradaic (EDLC) behavior in the window of 1.0 V. Sweep rates and cycle numbers are indicated in the figure.

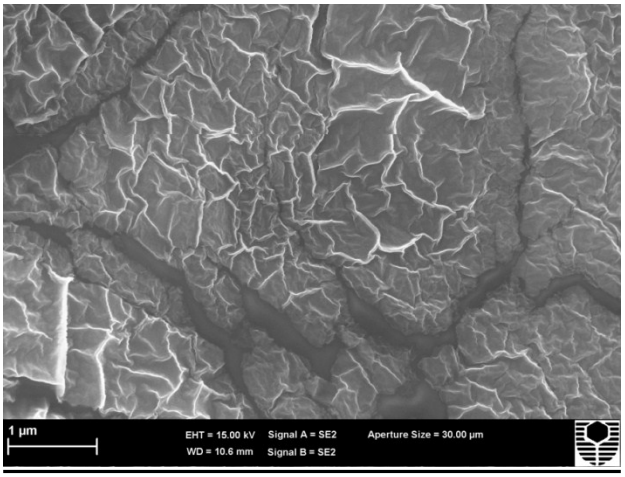

Figure S3 FE-SEM image of acetate-derived $NaNiPO_4$ showing nanosheet like structure.

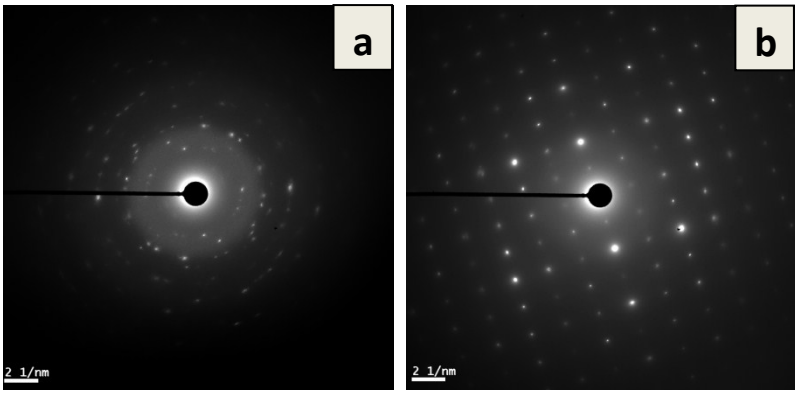

Figure S4 Selected area diffraction pattern (SADP) of (a) acetate and (b) nitrate-derived $NaNiPO_4$. (a) Sharp crystalline reflections are superimposed on a diffuse ring pattern in indicating that an amorphous component is present in the acetate-derived material. (b) Only crystalline reflections are present in the pattern from the nitrate-derived material.

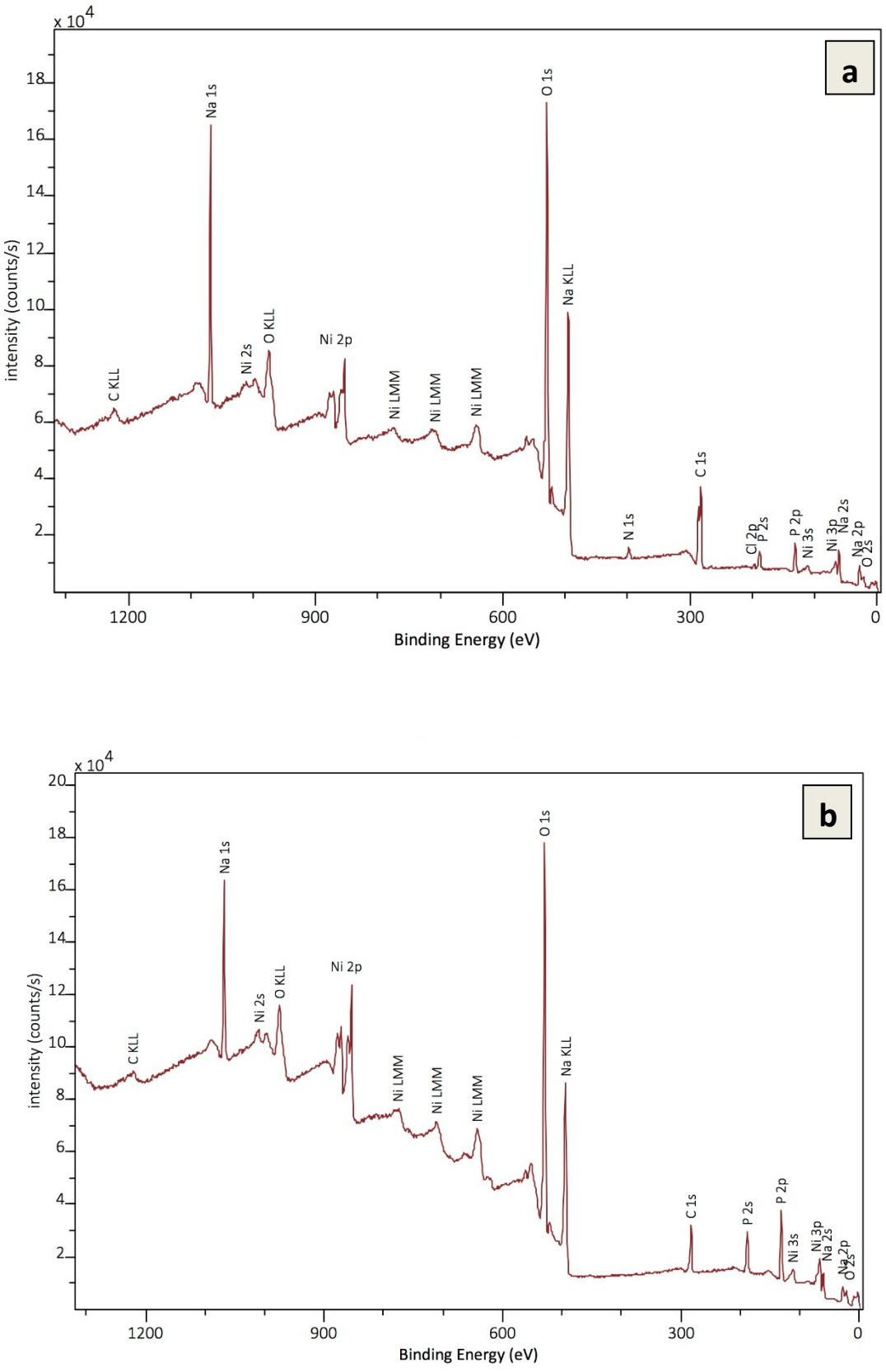

Figure S5 Survey spectra for as-prepared $NaNiPO_4$ samples derived from (a) acetate and (b) nitrate precursors illustrating the presence of absence of nitrogen N (1s) peak.

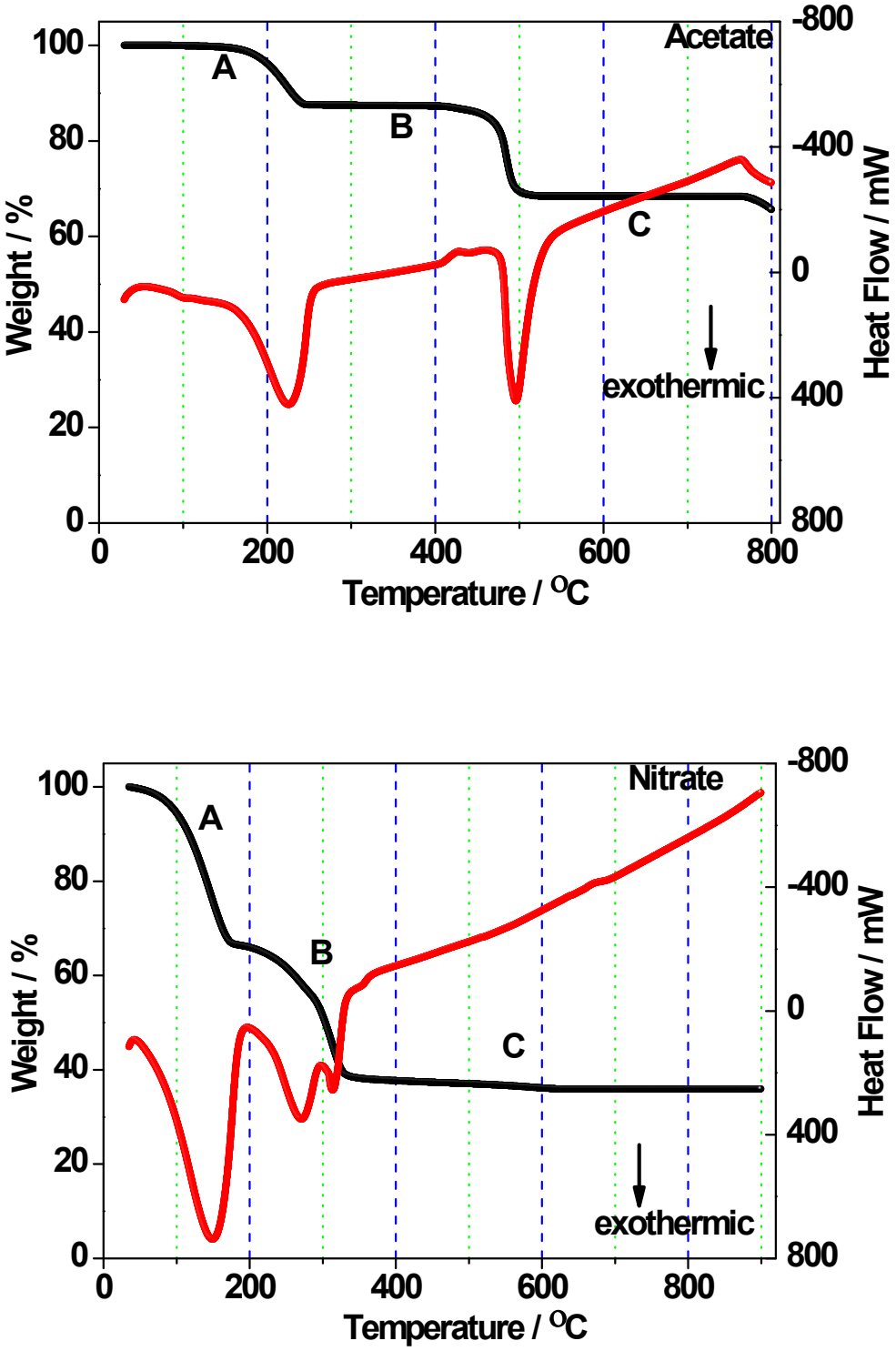

Figure S6 Thermo gravimetric (black curve) and differential thermal analyses (red curve) (TG-DTA) of acetate and nitrate-derived $NaNiPO_4$.

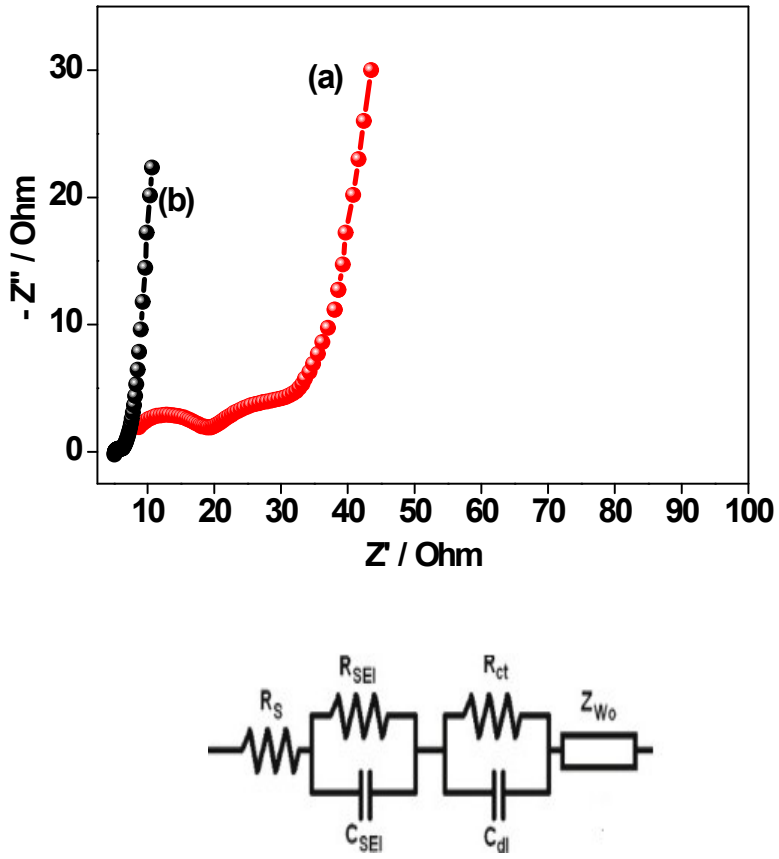

Figure S7 Nyquist plots for the asymmetric capacitor AC|NaNiPO4 obtained by the electrochemical impedance spectroscopy. The $NaNiPO_4$ electrodes synthesized with acetate and nitrate are shown in (a) and (b) respectively. The corresponding equivalent circuit is shown below the plot.