Electronic Supplementary Information

Controllable Synthesis of 3D $Ni_{\chi}Co_{1-\chi}$ Oxides with Different Morphology for High-Capacity Supercapacitors

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The data include Fig. S1-S4.

The specific capacitance of the electrode can be calculated from the CV curves according to the following equation:

$$C = (\int IdV)/(vm\Delta V) \qquad (1)$$

Where C (F g^{-1}) is the specific capacitance of the electrode, I (A) is the current of discharge, v (mV s^{-1}) is the scan rate, ΔV (V) is the total potential window, and m (g) is the mass of active material within the electrode.

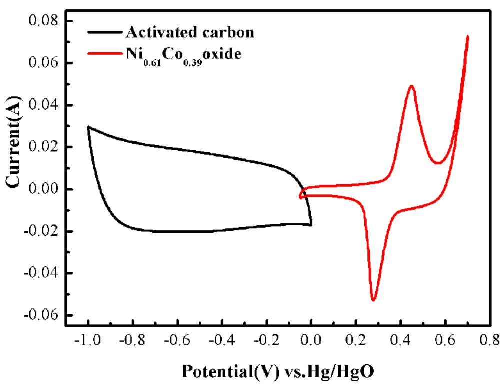

Fig. S1 CV curves of $Ni_{0.61}Co_{0.39}$ oxide and AC electrodes performed using the three-electrode cell in a 2M KOH solution with a Hg/HgO reference electrode at a scan rate of 10 mV s^{-1}.

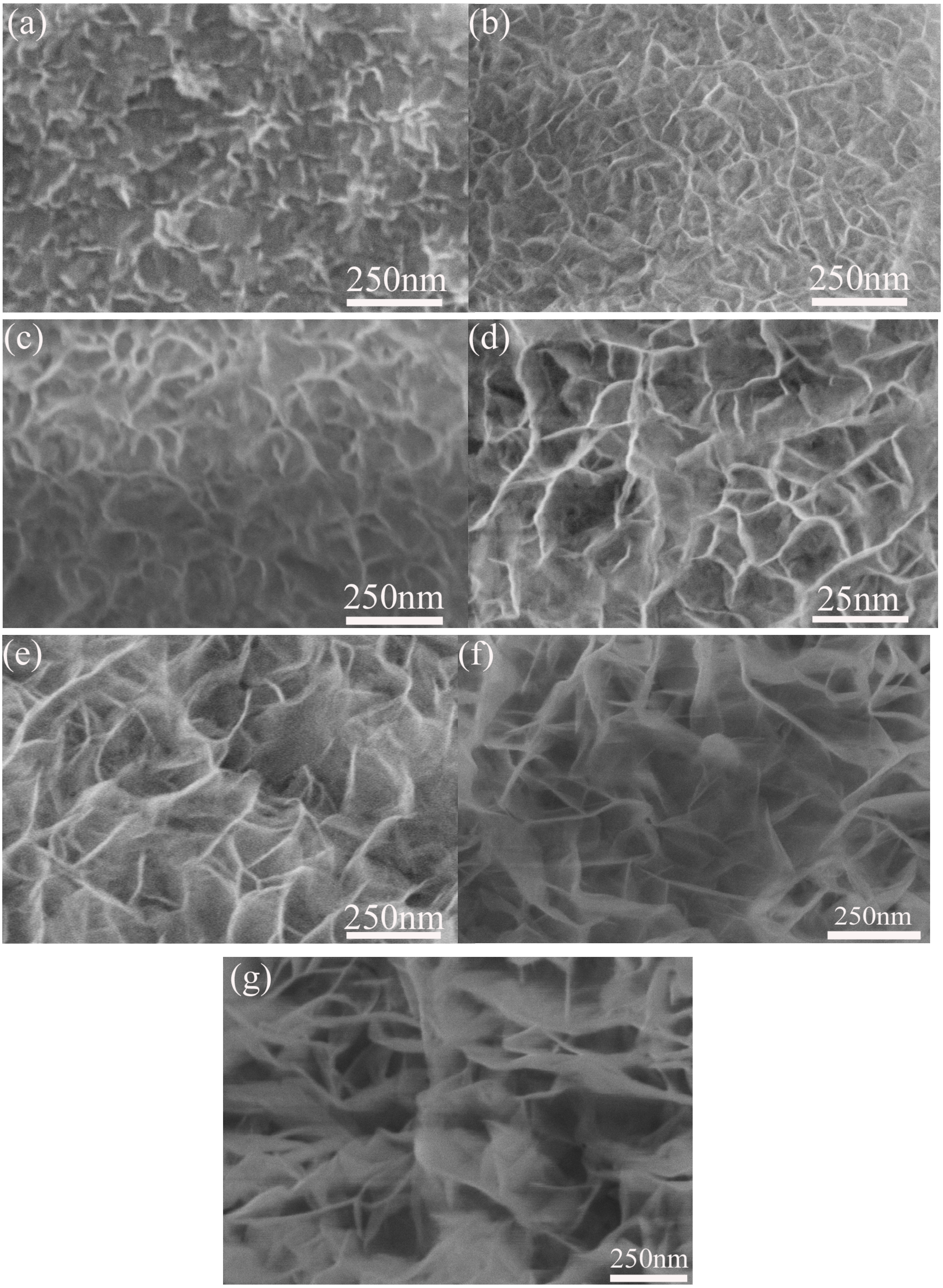

Fig. S2 FESEM images of the corresponding hydroxide precursors of $Ni_{\chi}Co_{1-\chi}$ oxides prepared in a series of electrodeposition electrolytes with different Co/Ni molar ratio. (a)

NiCoOH1; (b) NiCoOH2; (c) NiCoOH3; (d) NiCoOH4; (e) NiCoOH5; (f) NiCoOH6; (g) NiCoOH7.

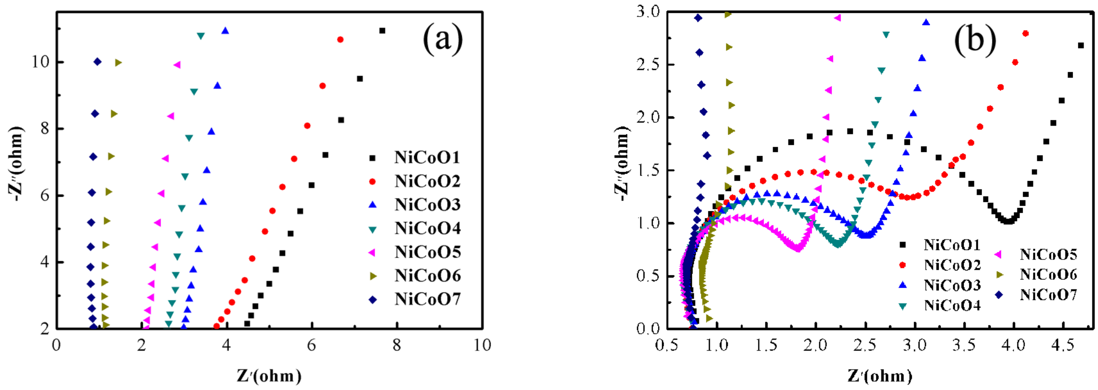

Fig. S3 (a) The separate impedence slope plot and (b) The separate diameter of semicircle polt on Nyquist plot of $Ni_{\chi}Co_{1-\chi}$ oxides in the frequency range 0.01 to 10^5 Hz.

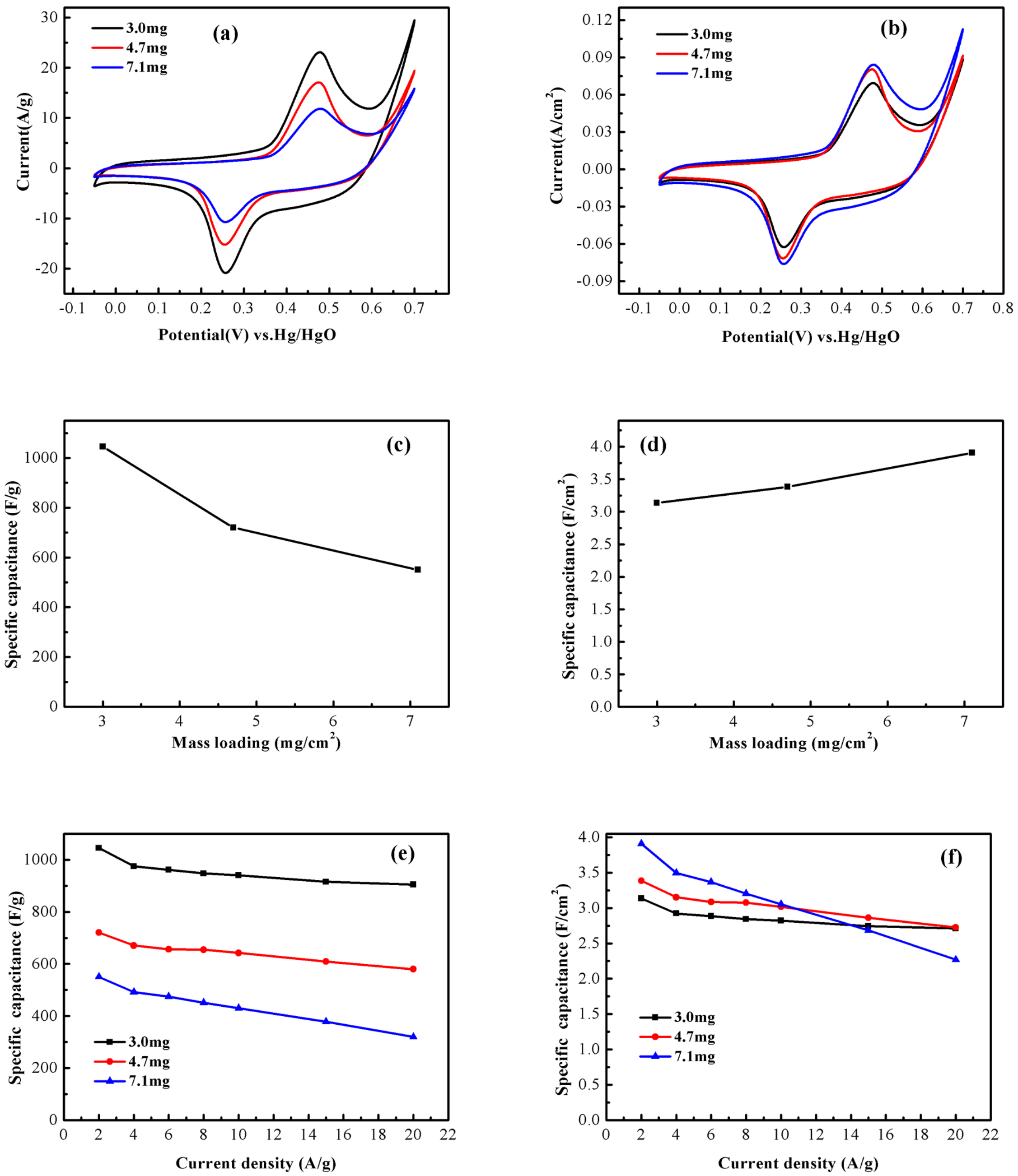

Fig. S4 Electrochemical performance of $Ni_{\chi}Co_{1-\chi}$ oxides with different areal masses (The mass loading of active materials are 3.0, 4.7 and 7.1 mg cm^{-2}, respectively). (a, b) CV curves at 10 mV s^{-1}; (c, d) The specific capacitance at the current density of 2 A g^{-1}; (e, f) The plots of the corresponding specific capacitance as a function of current density.