Supplementary Material

Fe substitution in urchin-like $NiCo_2O_4$ for energy storage devices

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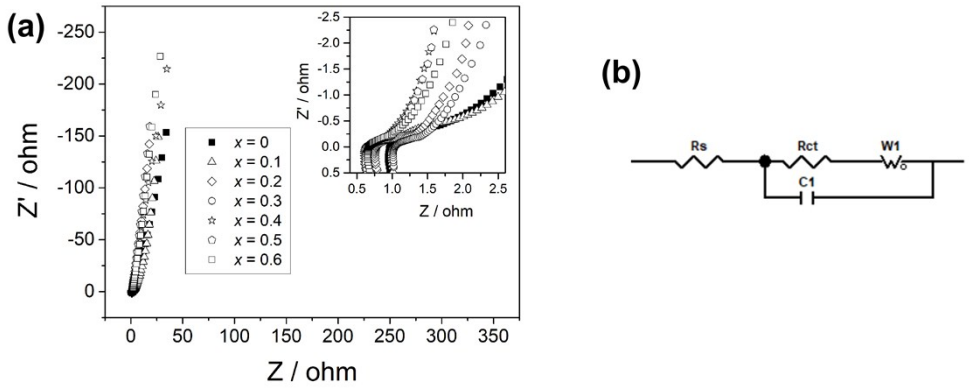

Fig. S1. (a) Nyquist plots of EIS with x =0 ~ 0.6. (b) A Randle circuit used in this work to fit the EIS spectra.

Table S1. Values of R_s, R_{ct} and Z_w of the fitting curves for compositions of x =0 ~ 0.6.

Values of x	R_s / Ω	R_{ct} / Ω	Z_w / Ω
0	0.96	0.21	4.26
0.1	1.10	0.23	5.00
0.2	0.78	0.21	1.50
0.3	1.04	0.09	1.50
0.4	0.63	0.07	1.05
0.5	0.68	0.08	0.99
0.6	0.67	0.07	1.61

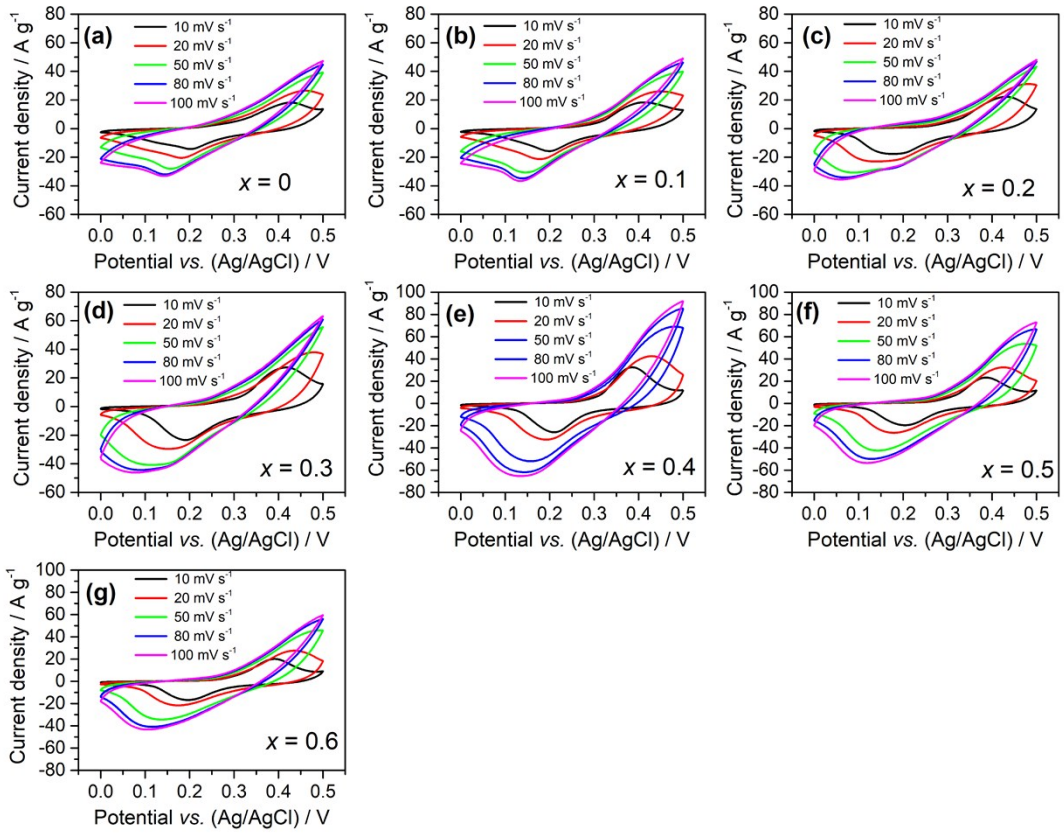

Fig. S2. (a)-(g) CV curves at scan rates from 10 to 100 mV s^{-1} for compositions of x = 0~0.6.

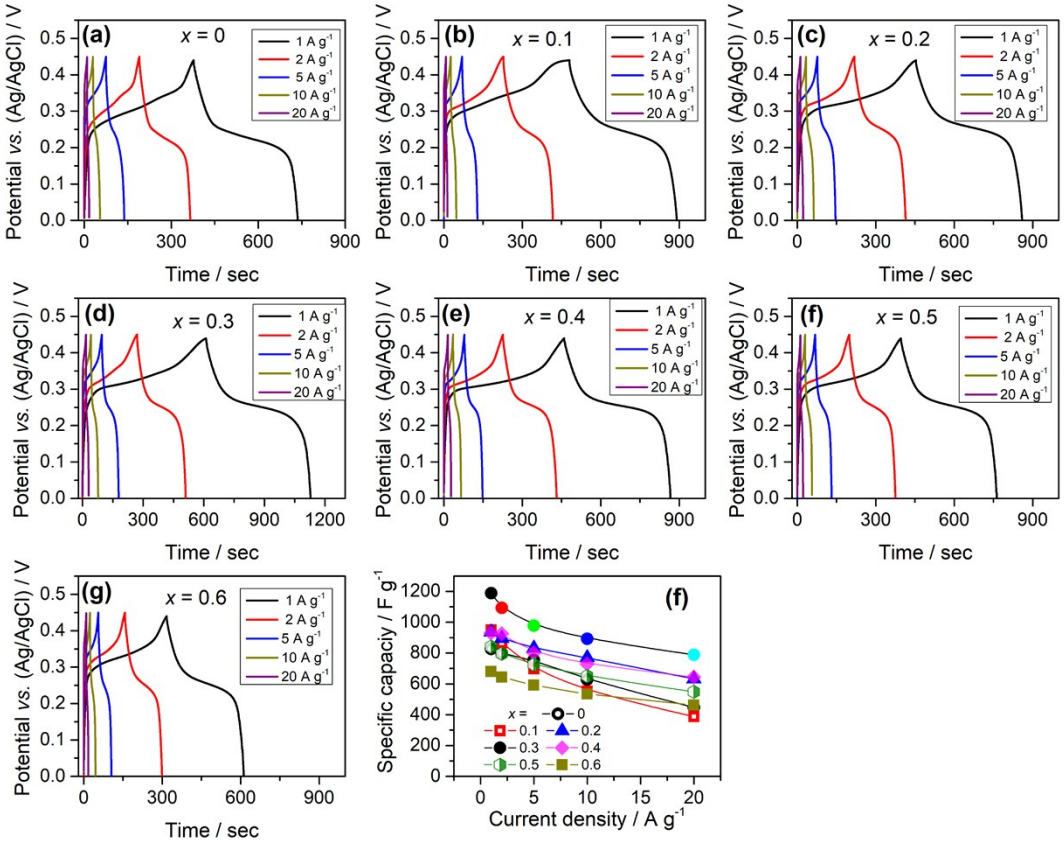

Fig. S3. (a)-(g) GCD curves at scan rates from 1 to 20 A g^{-1} for compositions of x = 0~0.6; (f) corresponding specific capacitance derived from the discharge curves.

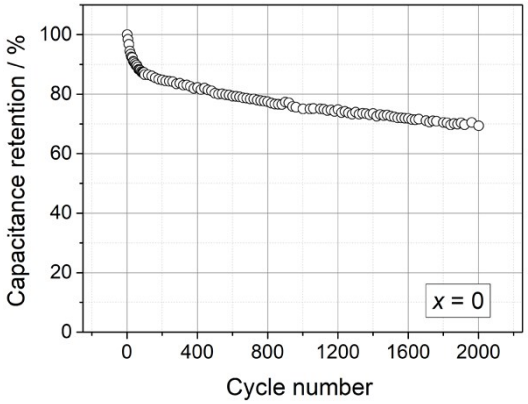

Fig. S4. Specific capacitance retention of x = 0 in 2000 GCD cycles at 5 A g^{-1}, tested in a three-electrode system.

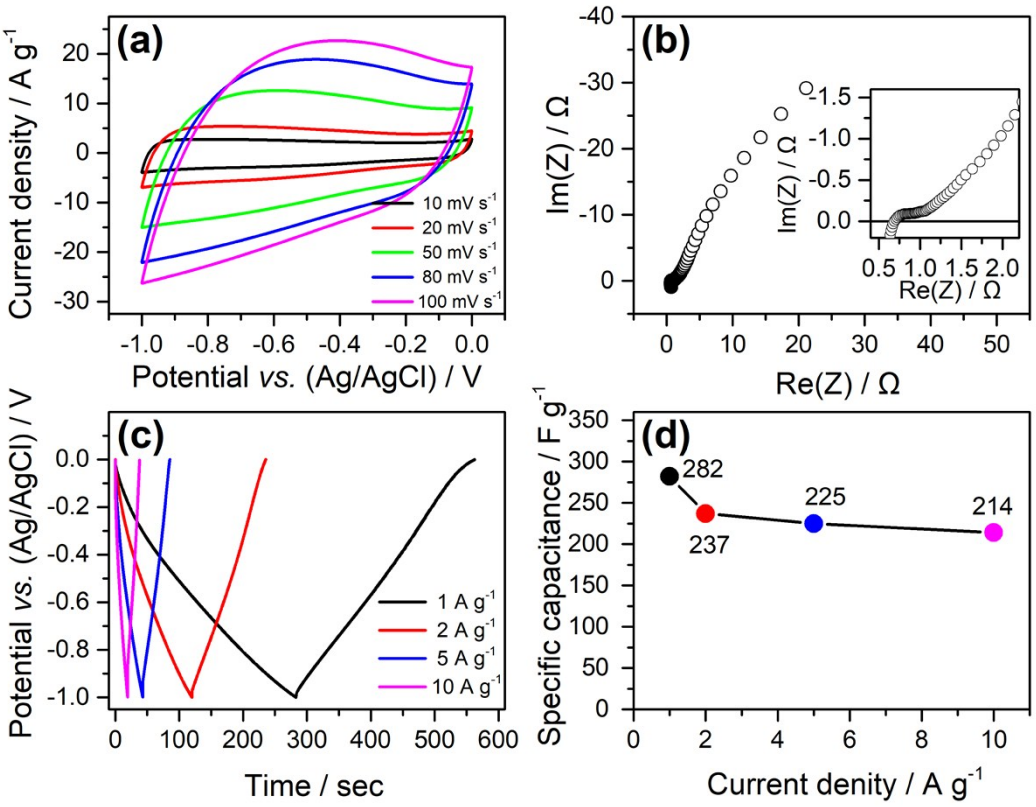

Fig. S5. Electrochemical performance of one typical commercial activated carbon electrode in a three-electrode configuration: (a) CV curves at scan rates from 10 to 100 mV s^{-1}; (b) Nyquist plots of EIS, inset shows the enlarged view of the high frequency area; (c) GCD curves at scan rates from 1 to 10 A g^{-1}; (d) specific capacitance derived from the GCD curves.