Supporting Information

Ni-NiO core-shell inverse opal electrode for supercapacitors

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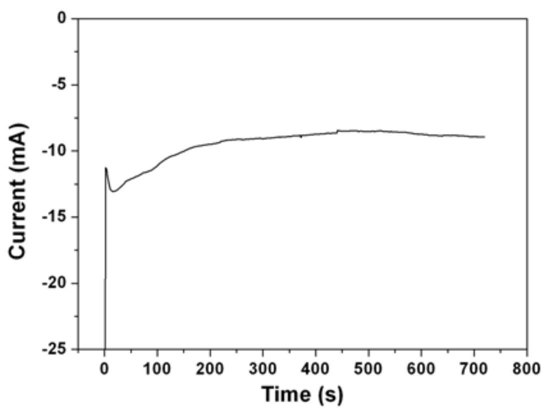

Figure S1. Current-time profile for the potentiostatic deposition of Ni metal.

Figure S1 shows the current-time profile for the potentiostatic deposition of Ni metal within the pores of the polystyrene opal template on fluorine-doped tin oxide substrate. The deposition potential was held at -1 V (vs. Ag/AgCl).

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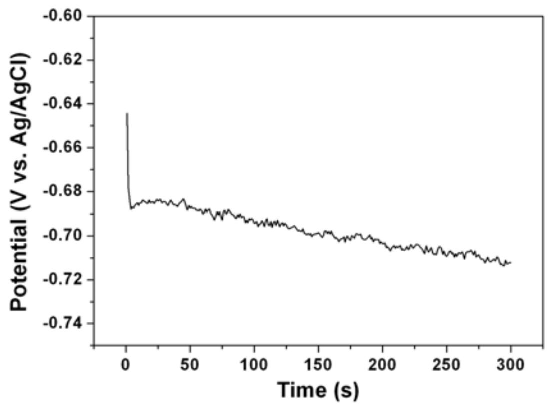

Figure S2. Voltage-time profile for the galvanostatic deposition of $Ni(OH)_2$.

Figure S2 shows the voltage profile for the galvanostatic deposition of $Ni(OH)_2$ on the surface of Ni inverse opal structure. The deposition current was held at 1 mA cm^{-2}.

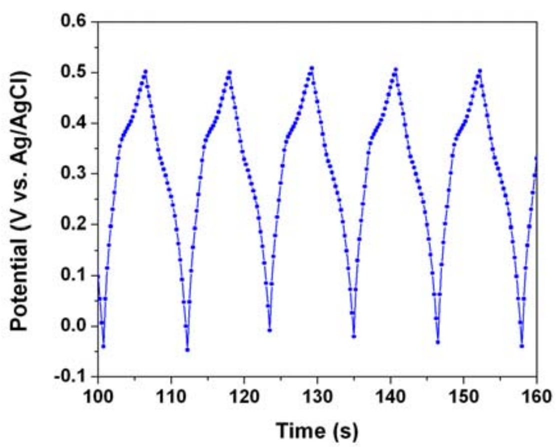

Figure S3. Typical voltage profiles of the Ni-NiO inverse opal electrode cycled at 1 mA cm^{-2}.

Figure S3 shows several cycles of representative voltage profiles of the Ni-NiO inverse opal electrode from galvanostatic charge/discharge measurements performed at 1 mA cm^{-2}. No significant current-resistance drop is observed.

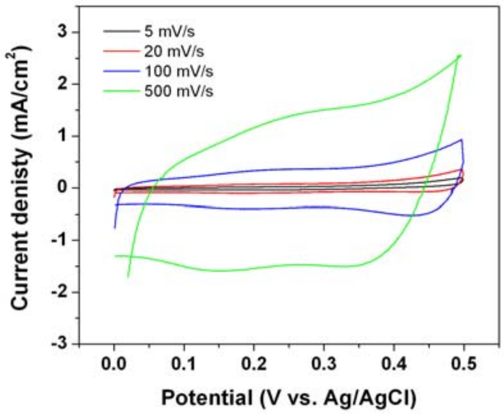

Figure S4. Cyclic voltammograms of the NiO nanoparticle electrode at various scan rates (5–500 mV/s).

Figure S4 shows the cyclic voltammograms of the NiO nanoparticle electrode in the potential window from 0.0 to 0.5 V (vs. Ag/AgCl). The scan rate varies from 5 to 500 mV/s. At the lowest scan rate (5 mV/s), the specific capacitance of the nanoparticle electrode was about 10 F/g.