

Supporting Information

Core-shell assembly of Co₃O₄@NiO-ZnO nanoarrays as battery-type electrode for high-performance supercapattery

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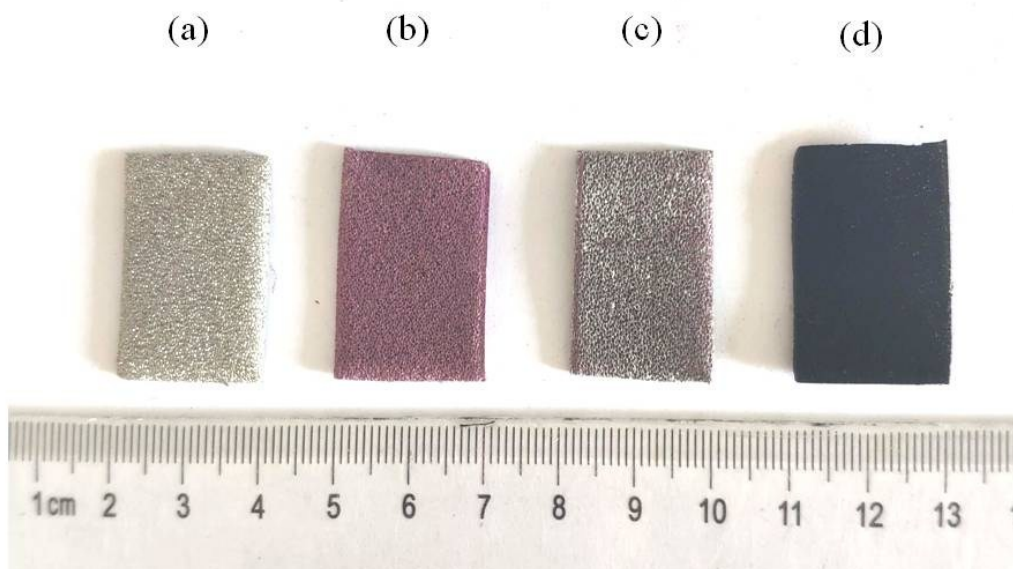


Fig. S1. Photographs of (a) Ni foam, (b) Co-precursor, (c) Co-precursor@Ni-Zn MOF, (d) $\text{Co}_3\text{O}_4@\text{NiO}/\text{ZnO}$ arrays.

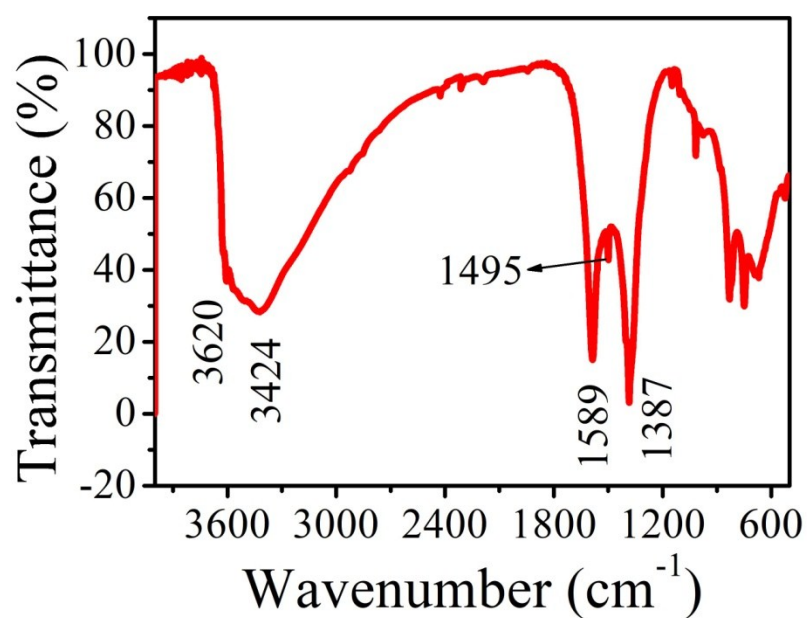


Fig. S2. FT-IR spectrum of Co-precursor@Ni-Zn MOF nanocomposite.

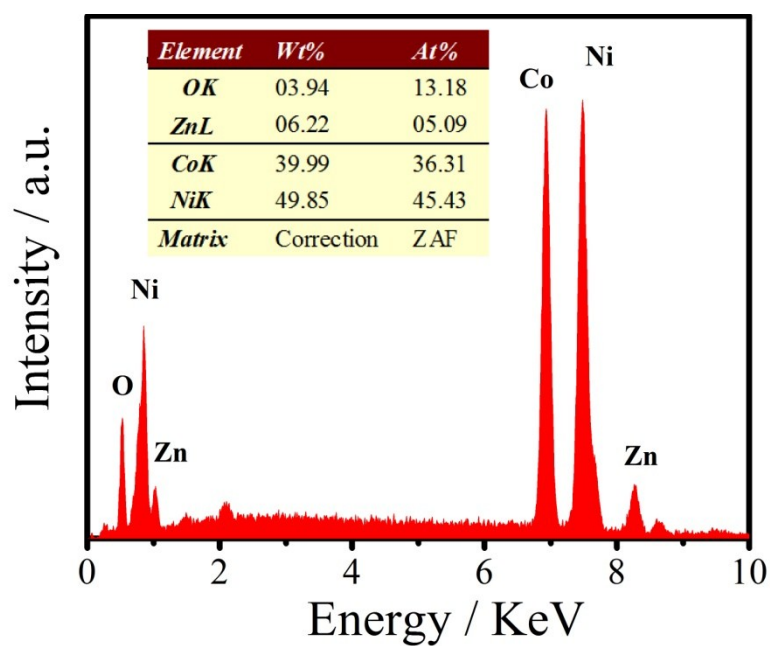


Fig. S3. EDS spectra of $\text{Co}_3\text{O}_4@\text{NiO}/\text{ZnO}$ arrays.

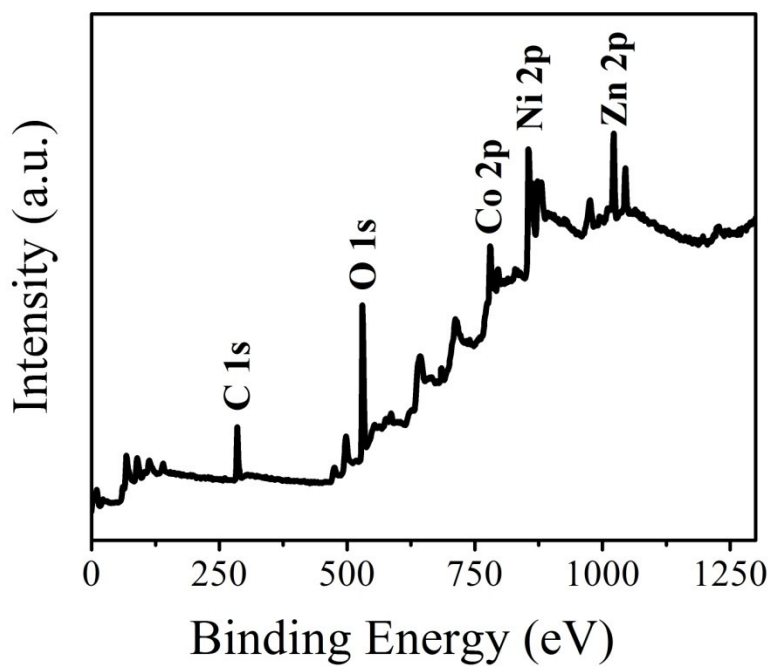


Fig. S4. Survey spectra of $\text{Co}_3\text{O}_4@\text{NiO}/\text{ZnO}$ nanocomposite.

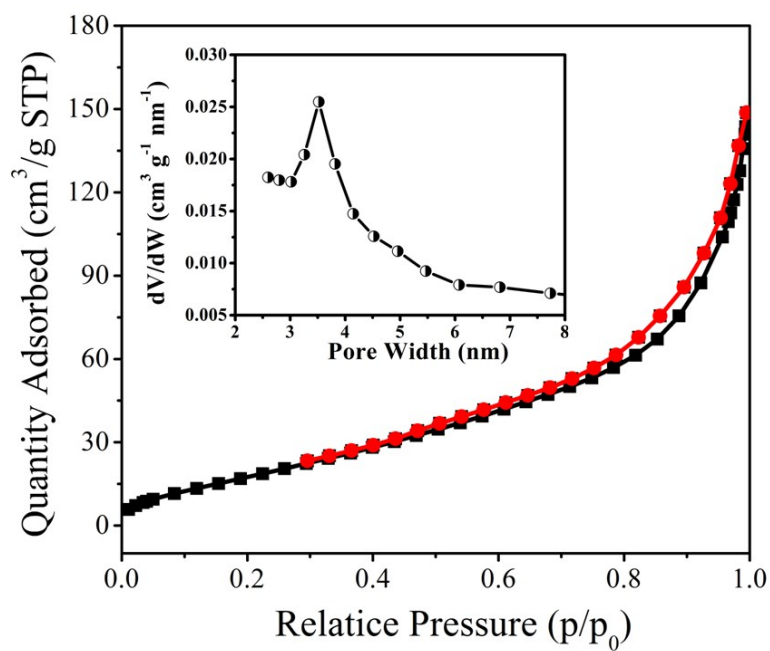


Fig. S5. N_2 adsorption-desorption isotherm and pore size distribution curve of $Co_3O_4@NiO/ZnO$ nanocomposite.

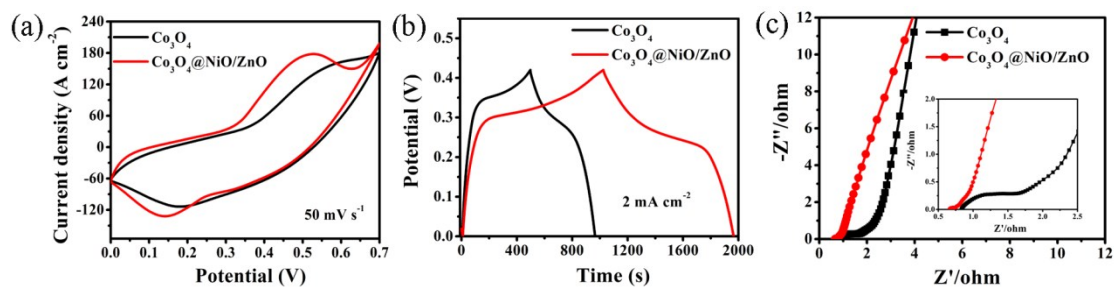


Fig. S6. (a) CV curves, (b) GCD curves and (c) Nyquist plots of Co_3O_4 and $Co_3O_4@NiO/ZnO$ arrays.

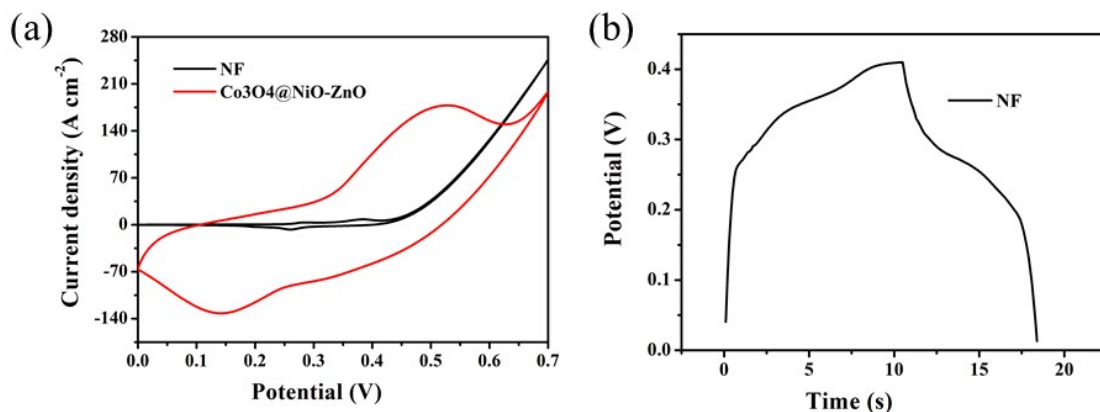


Fig. S7. (a) CV curve of the pretreated Ni foam and $\text{Co}_3\text{O}_4@\text{NiO}/\text{ZnO}$ at a scan rate of 50 mV s^{-1} , (b) GCD curve of the pretreated Ni foam at a current density of 2 mA cm^{-2}

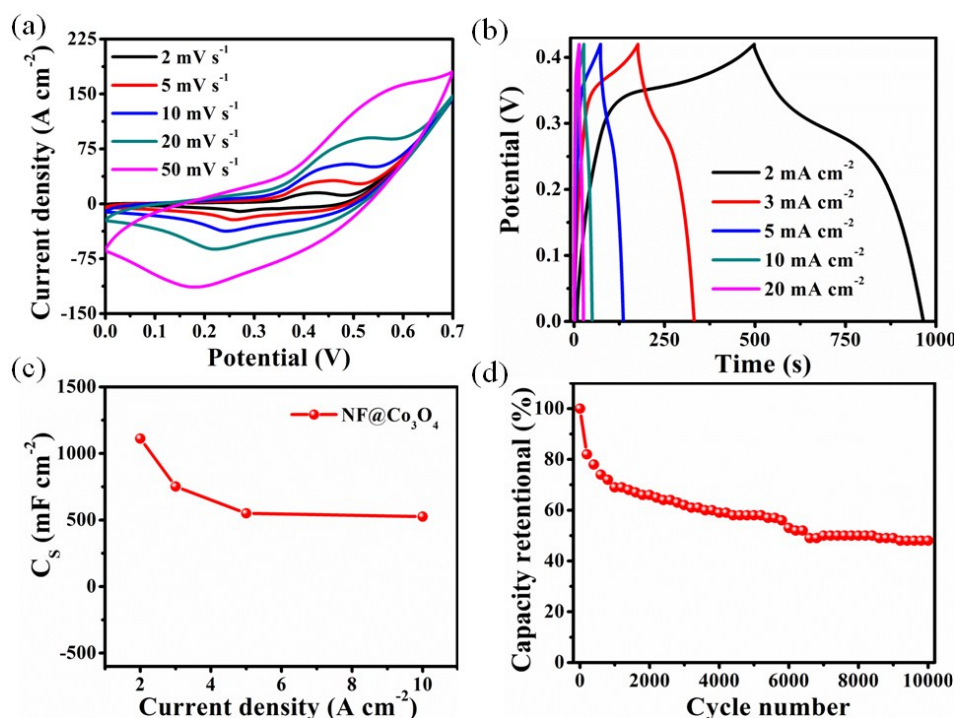


Fig. S8. (a) CV curves, (b) GCD curves, (c) Specific capacitance curve, (d) Cycling stability of Co_3O_4 on Ni foam.

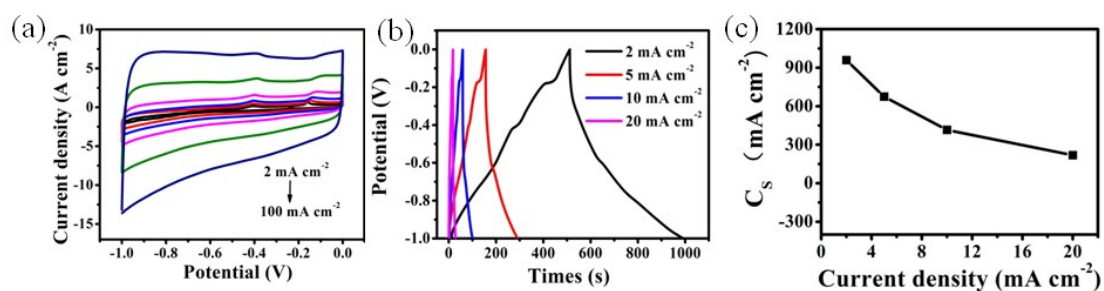


Fig. S9. (a) CV curves, (b) GCD curves, (c) Specific capacitance curve of AC.

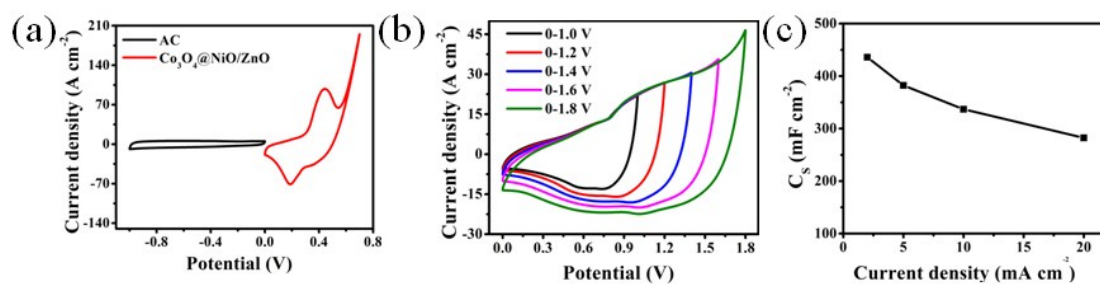


Fig. S10. (a) CV curves of Co₃O₄@NiO/ZnO and AC at 20 mV s⁻¹; (b) CV curves of ASC in various potential windows at scan rate of 50 mVs⁻¹; (c) Corresponding areal capacitance of ASC.

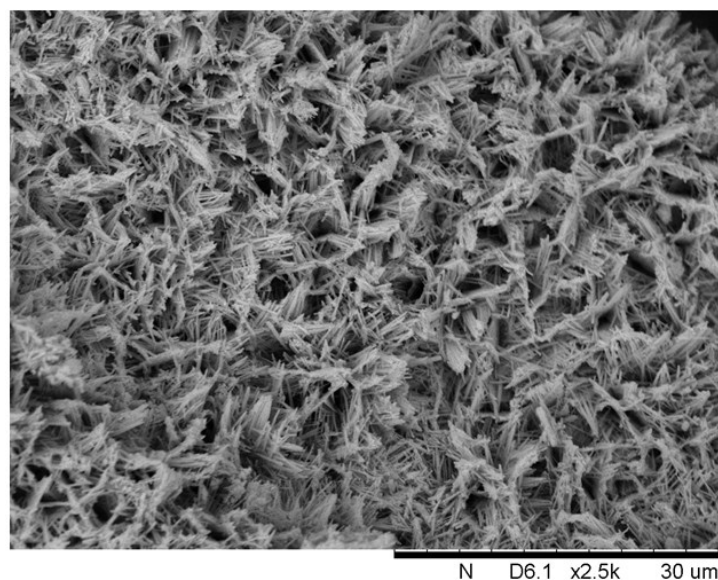


Fig. S11. SEM images after long-term cycling text (10,000 cycles) of the Co₃O₄@NiO-ZnO.