

Supporting Information for:

Ultrathin NiCo₂O₄ nanosheets grown on three-dimensional interwoven nitrogen-doped carbon nanotubes as binder-free electrodes for high-performance supercapacitors

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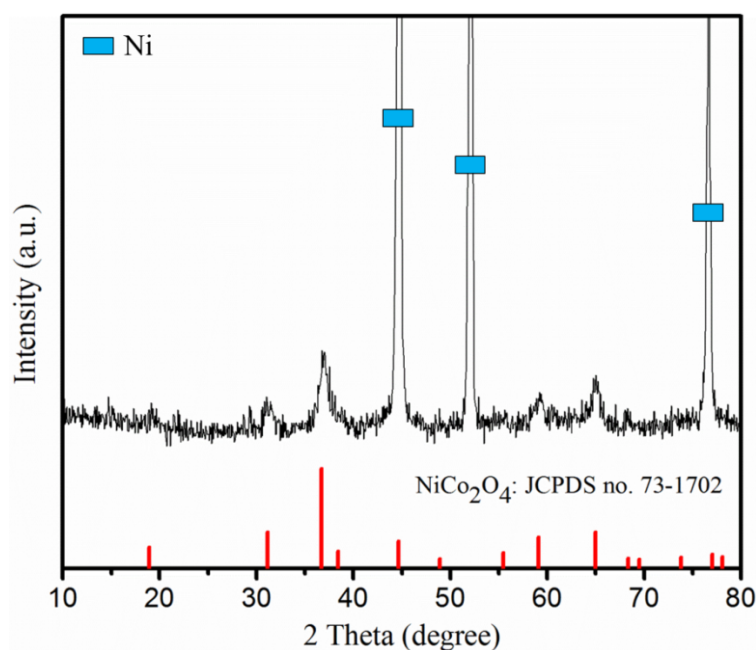


Fig. S1: XRD pattern of the Ni foam/NiCo₂O₄ NS.

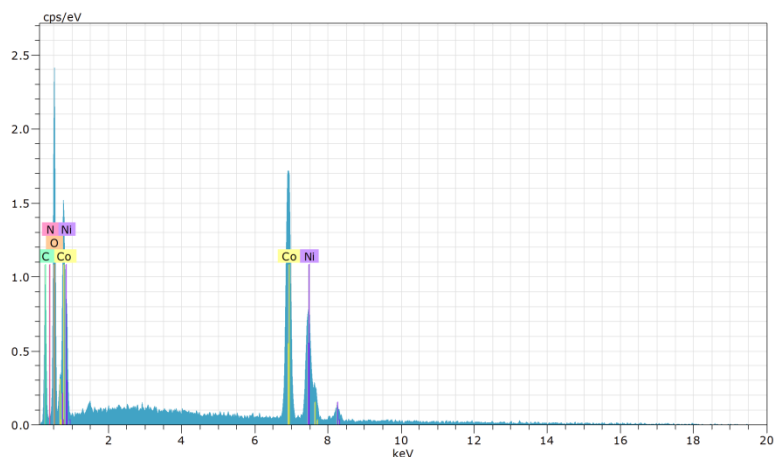


Fig. S2: EDX pattern of the N-CNTs/NiCo₂O₄ NS.

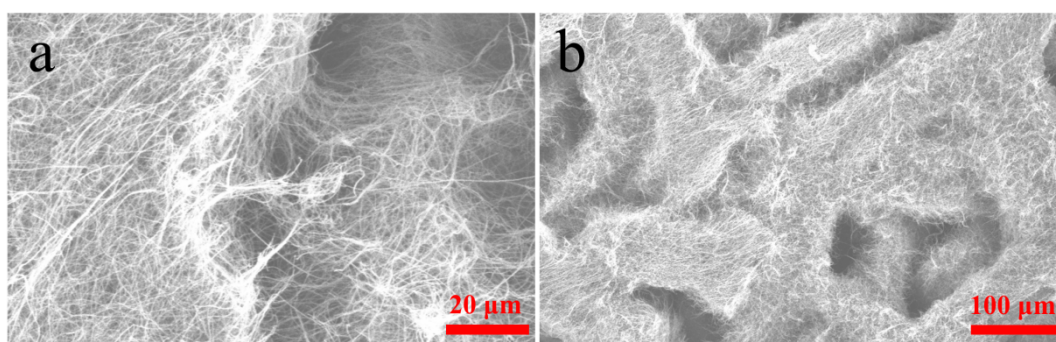


Fig. S3: SEM images of N-CNTs grown on Ni foam.

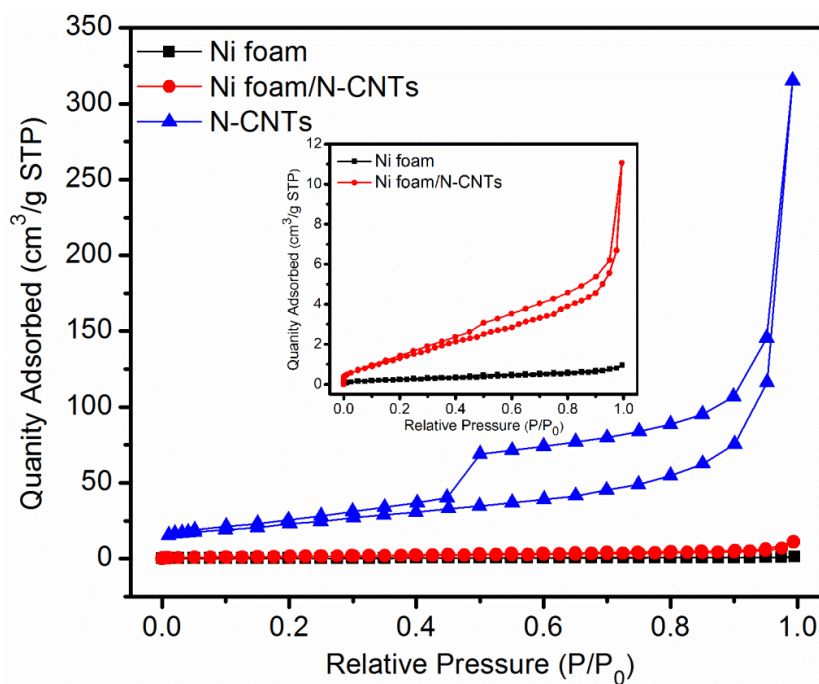


Fig. S4: Nitrogen adsorption and desorption isotherm N₂ adsorption–desorption isotherms of the Ni foam, N-CNTs, and Ni foam/N-CNTs.

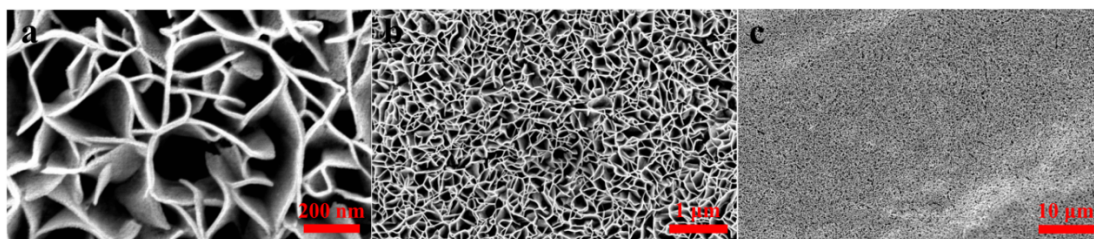


Fig. S5: Low- and high-magnification SEM images of the Ni foam/NiCo₂O₄ NS.

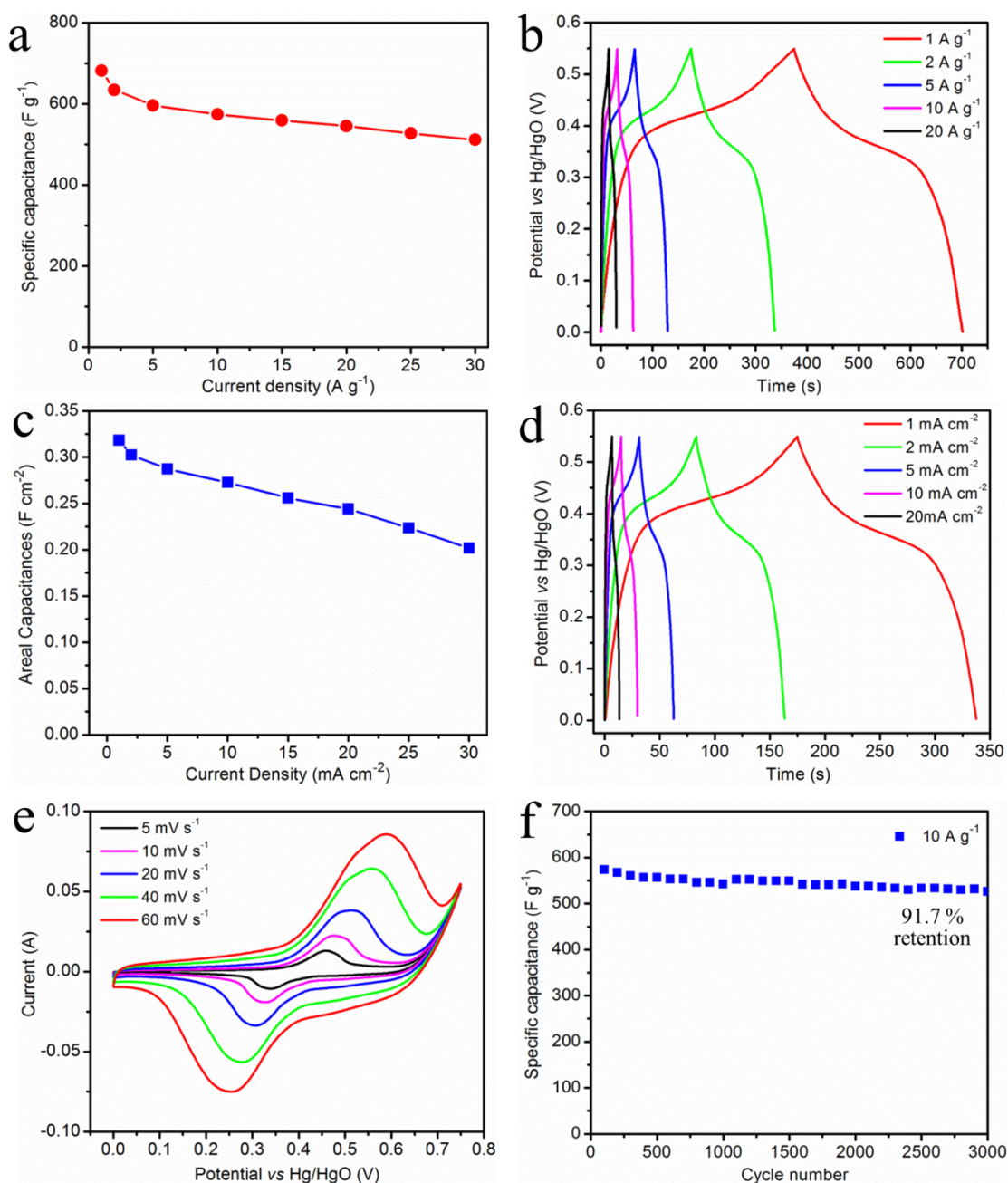


Fig. S6: Electrochemical characterizations of the Ni foam/ NiCo₂O₄ NS electrode: (a) and (c) are the specific capacitances and areal capacitances of the electrode as a

function of current density, respectively. (b) and (d) are the charge and discharge curves at various current densities from 1 to 20 A g⁻¹ and from 1 to 20 mA cm⁻², respectively. (e) CV curves at various scan rates from 5 to 60 mV s⁻¹. (f) Cycling performance at a high current density of 10 A g⁻¹.

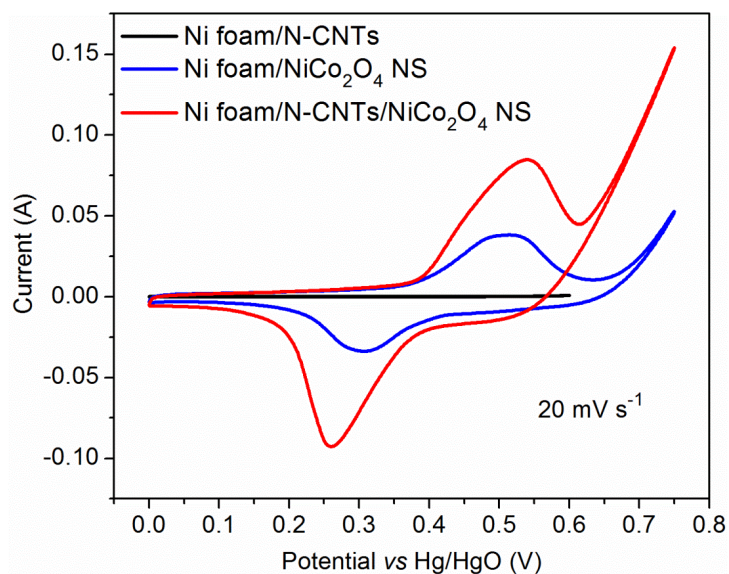


Fig. S7: Comparative CV curves of Ni foam/N-CNTs, Ni foam/NiCo₂O₄ NS and Ni foam/N-CNTs/NiCo₂O₄ NS at a scan rate of 20 mV s⁻¹.

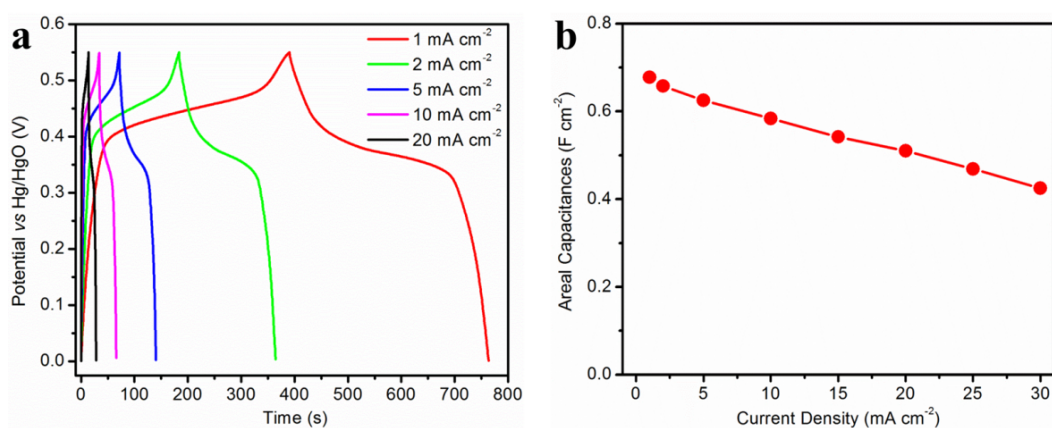


Fig. S8: (a) Charge and discharge curves of the 3D Ni foam/N-CNTs/NiCo₂O₄ NS at different current densities of 1, 2, 5, 10, and 20 mA cm⁻². (b) Areal capacitances of the electrode as a function of current density.

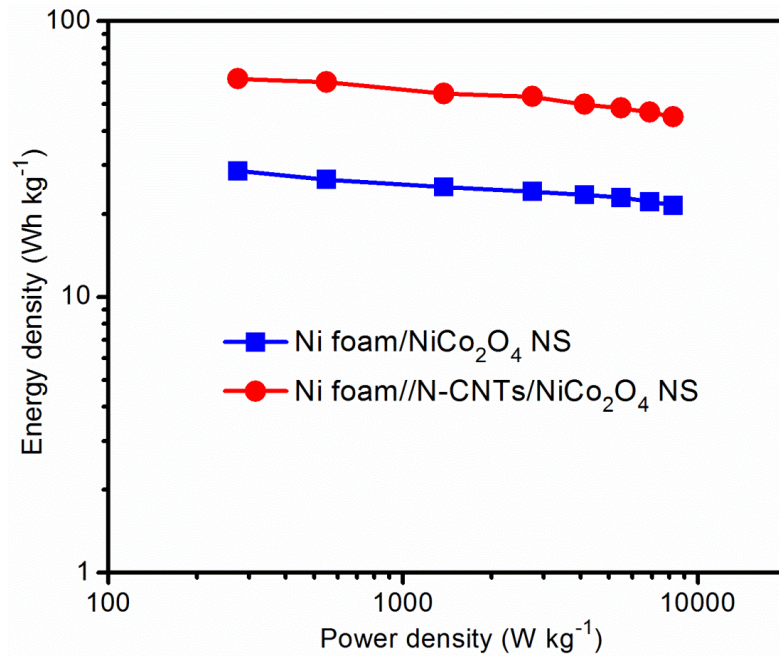


Fig. S9: Ragone plot of the power and energy density of the Ni foam/NiCo₂O₄ NS and Ni foam/N-CNTs/NiCo₂O₄ NS at different current densities of 1, 2, 5, 10 and 20 A g⁻¹.

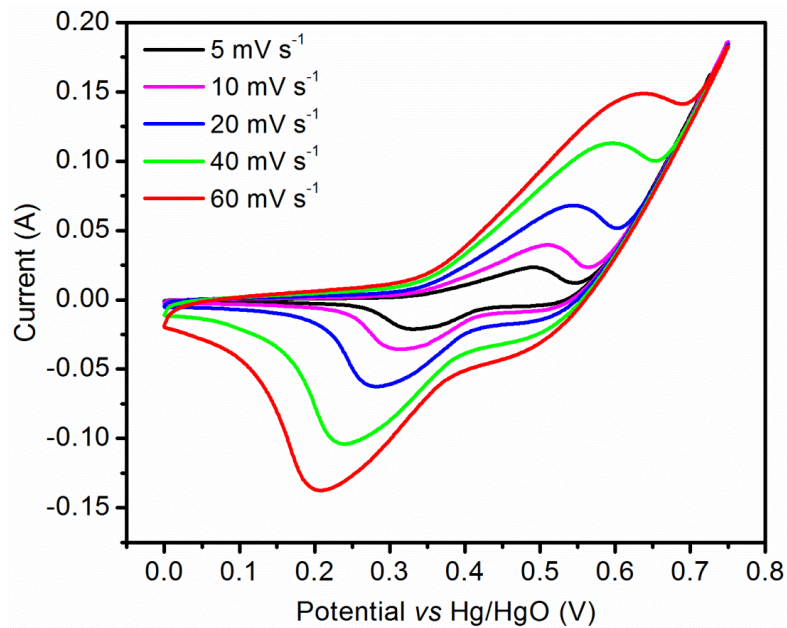


Fig. S10: CV curves of the 9000th cycle of the 3D Ni foam/N-CNTs/NiCo₂O₄ NS electrode at various scan rates from 5 to 60 mV s⁻¹.