

Supporting Information

Hierarchical 3D NiFe₂O₄@MnO₂ core-shell nanosheet arrays on Ni foam for high-performance asymmetric supercapacitors

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Table S1 The comparison results of electrochemical performance for NiFe₂O₄ and NiFe₂O₄@MnO₂ composite electrodes.

Samples	Mass loading (mg cm ⁻²)	Cs (F g ⁻¹) at 2 mA cm ⁻²	Cs (F g ⁻¹) at 5 mA cm ⁻²	Cs (F g ⁻¹) at 8 mA cm ⁻²	Cs (F g ⁻¹) at 10 mA cm ⁻²	Cs (F g ⁻¹) at 20 mA cm ⁻²
NiFe ₂ O ₄	0.89	1152	1073	1006	942	782
NiFe ₂ O ₄ @MnO ₂	1.11	1391	1269	1188	1123	893

Table S2 The comparison results of electrochemical performance for NiFe₂O₄@MnO₂ and other previously reported NiFe₂O₄ nanostructures electrodes.

Electrode materials	Specific capacitance	Ref.
NiFe ₂ O ₄ @MnO ₂ core@shell nanosheet arrays	1391 F g ⁻¹ at 2 mA cm ⁻²	This work
NiFe ₂ O ₄ /graphene nanocomposites	345.0 F g ⁻¹ at 1 A g ⁻¹	42
NiFe ₂ O ₄ /PEDOT nanocomposites	251 F g ⁻¹ at 1 mA cm ⁻²	43
NiFe ₂ O ₄ nanostructures	97.5 F g ⁻¹ at 0.8 mA cm ⁻²	44
NiFe ₂ O ₄ /PANI nanocomposites	448 F g ⁻¹ at 1 mA cm ⁻²	45

Table S3 Comparison of energy density of our hybrid supercapacitor and other previously reported asymmetric supercapacitors.

Asymmetric Supercapacitors	Energy density	Ref.
NiFe ₂ O ₄ @MnO ₂ //AC	45.2 Wh kg ⁻¹ at 174 W kg ⁻¹	This work
Co-Fe LDH@NiO-Ni//AC	22 Wh kg ⁻¹ at 800 W kg ⁻¹	47
Ni(OH) ₂ //Fe ₂ O ₃ /RGO/Fe ₃ O ₄	4.1 Wh kg ⁻¹ at 661.5 W kg ⁻¹	48
NiO//carbon	15 Wh kg ⁻¹ at 447 W kg ⁻¹	27
Co ₃ O ₄ @MnO ₂ //AC	17.7 Wh kg ⁻¹ at 600 W kg ⁻¹	49

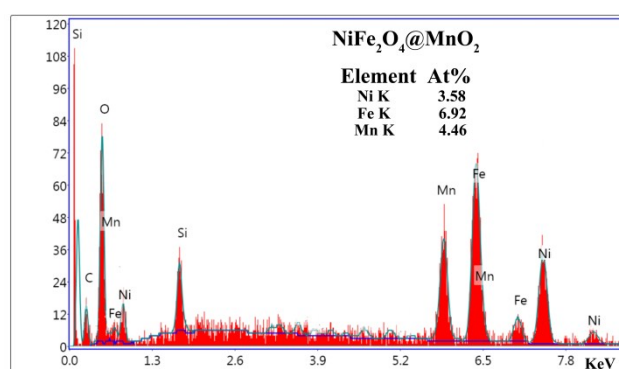


Fig. S1. EDS spectra of NiFe₂O₄@MnO₂ core-shell NSAs.

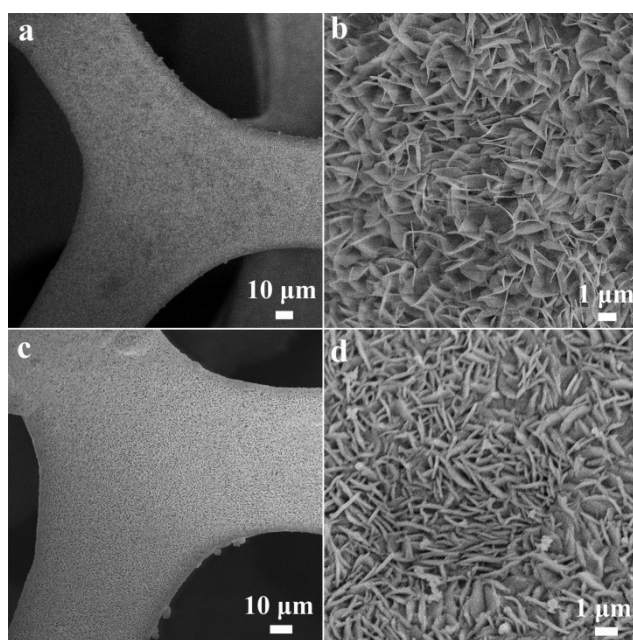


Fig. S2. Low magnification SEM images of (a, b) NiFe₂O₄ NSAs and (c, d) hierarchical NiFe₂O₄@MnO₂ NSAs grown on Ni foam.

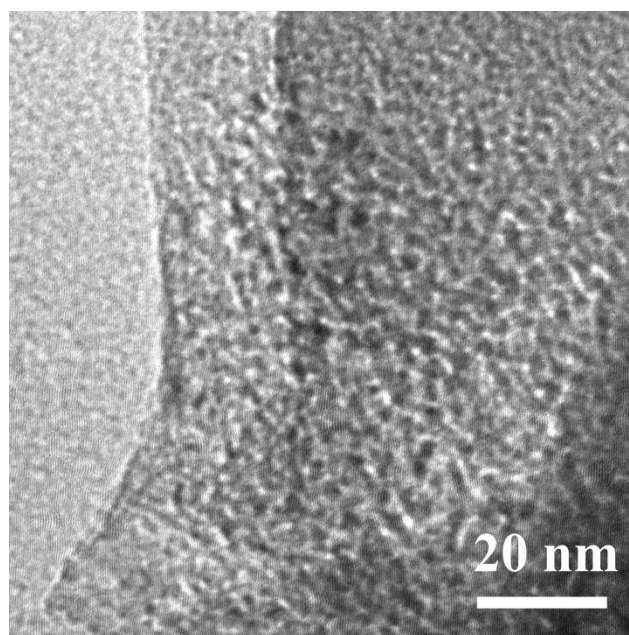


Fig. S3. HRTEM image of a NiFe₂O₄ nanosheet.