

Supplementary Information

Design of Multiple Electrode Structure Based on nano Ni_3S_2 and Carbon Nanotubes for High Performance Supercapacitor

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Supplementary Figures

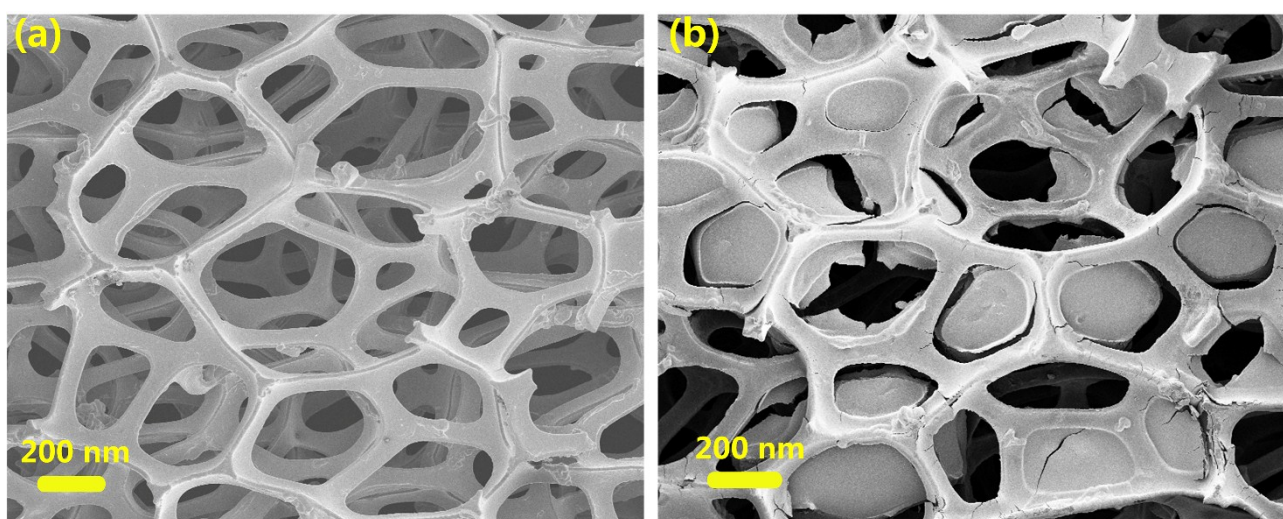


Fig. S1. SEM images of (a) Ni foam and (b) Ni foam after “Dipping and drying” process.

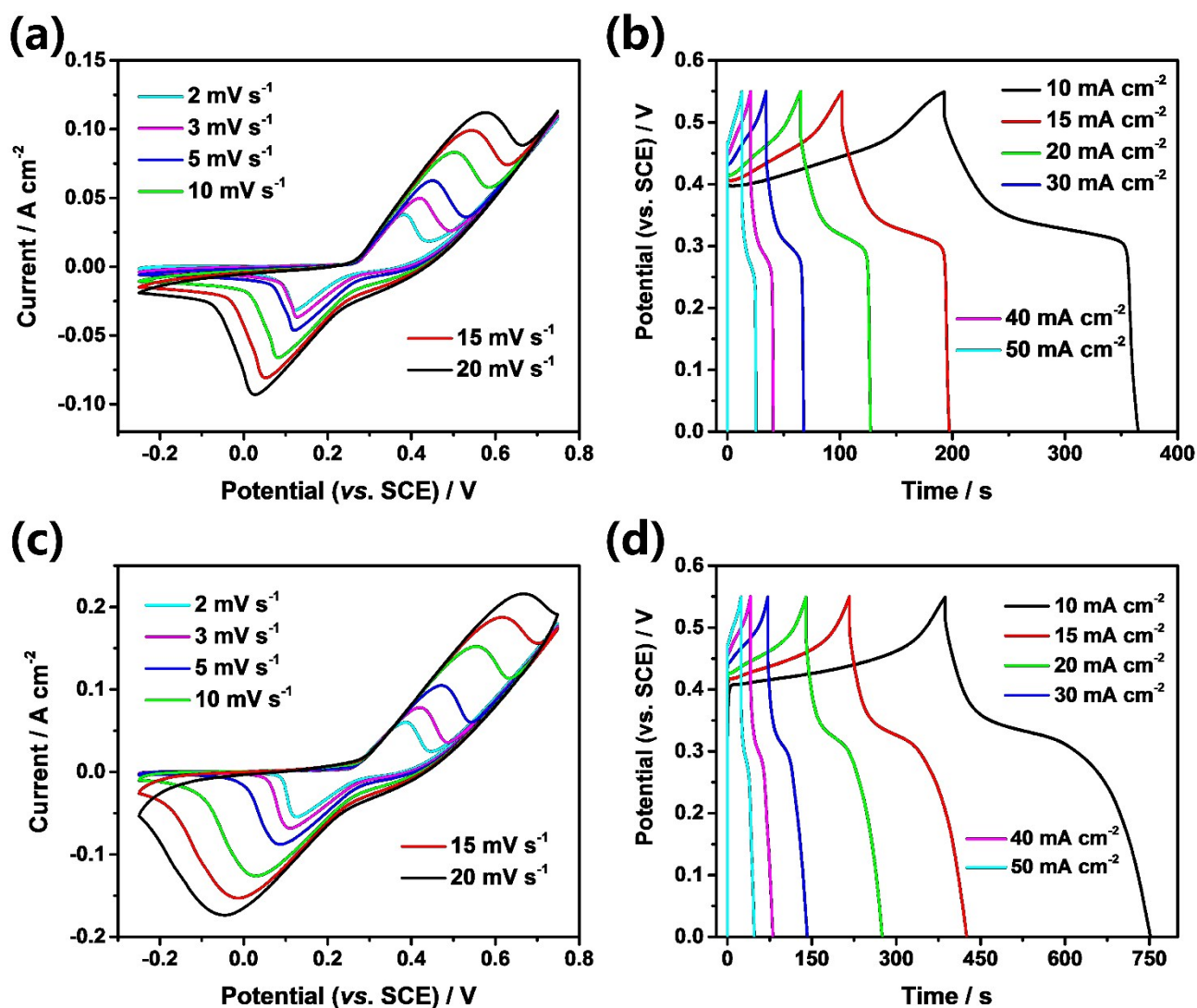


Fig. S2. Electrochemical performance of the samples. (a) CV curves of the CNT-Ni₃S₂. (b) GCD curves of CNT-Ni₃S₂ at different current densities from 10-50 mA·cm⁻². (c) CV curves of the CNT-Ni₃S₂-A. (d) GCD curves of CNT-Ni₃S₂-A at different current densities from 10-50 mA·cm⁻².

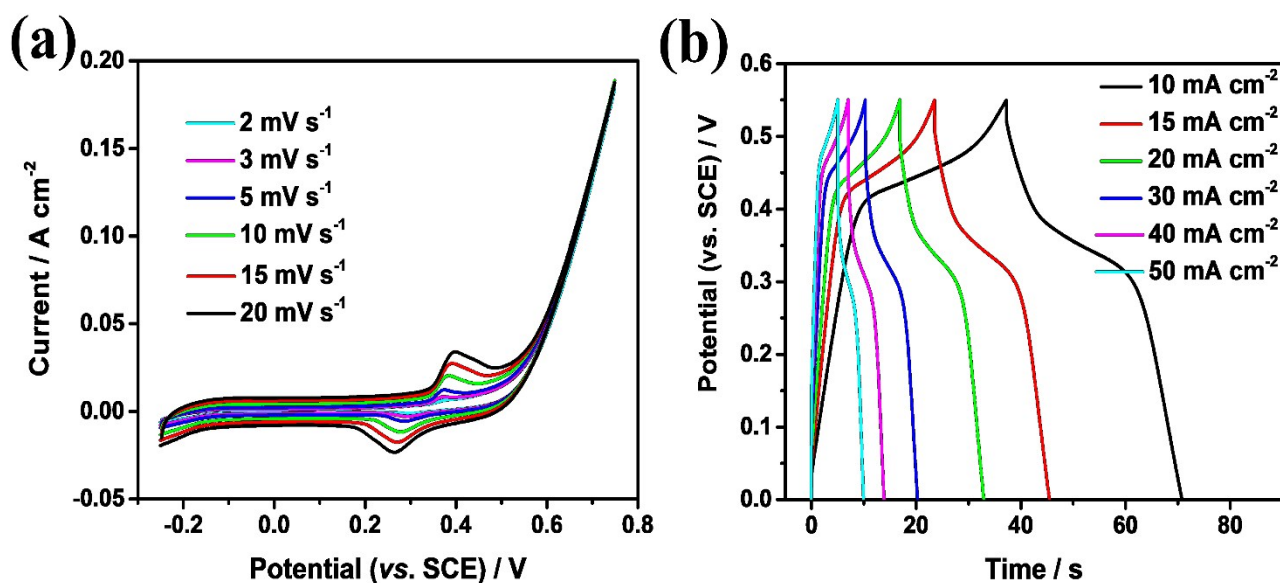


Fig. S3. (a) CV curves of the CNT. (b) GCD curves of the CNT at different current densities from 10-50 mA cm^{-2} .

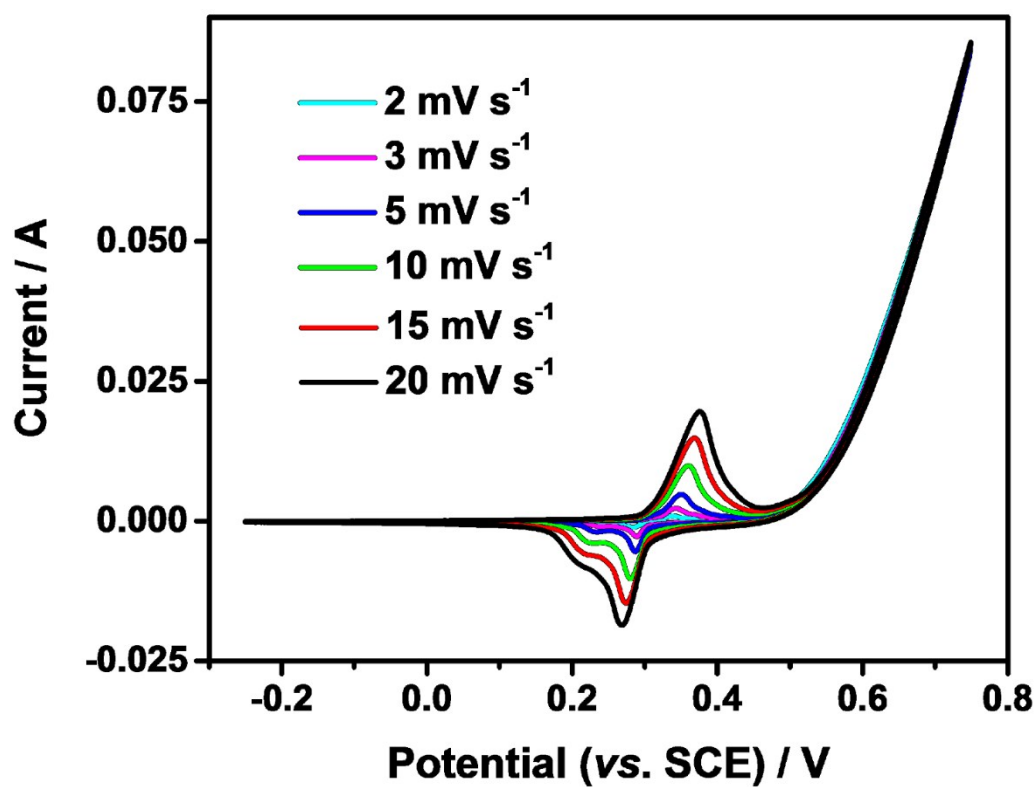


Fig. S4. CV curves of Ni foam at different scan rate from 2-20 mV s^{-1} .

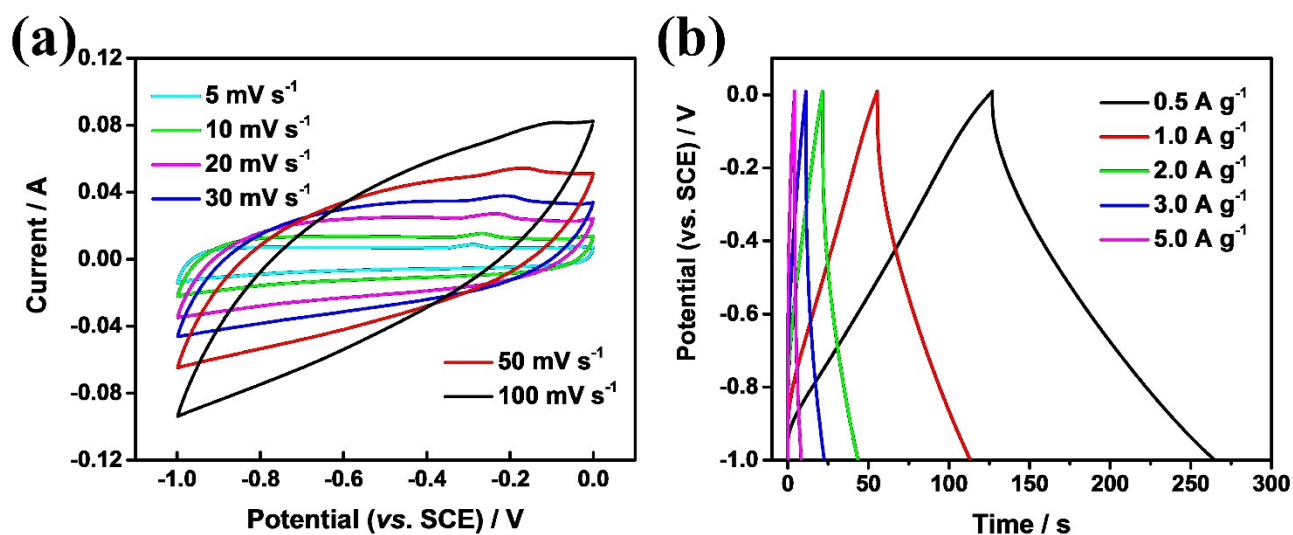


Fig. S5. Electrochemical performance of the AC. (a) CV curves of AC. (b) GCD curves of AC at different current densities from 0.5-5.0 A g⁻¹.

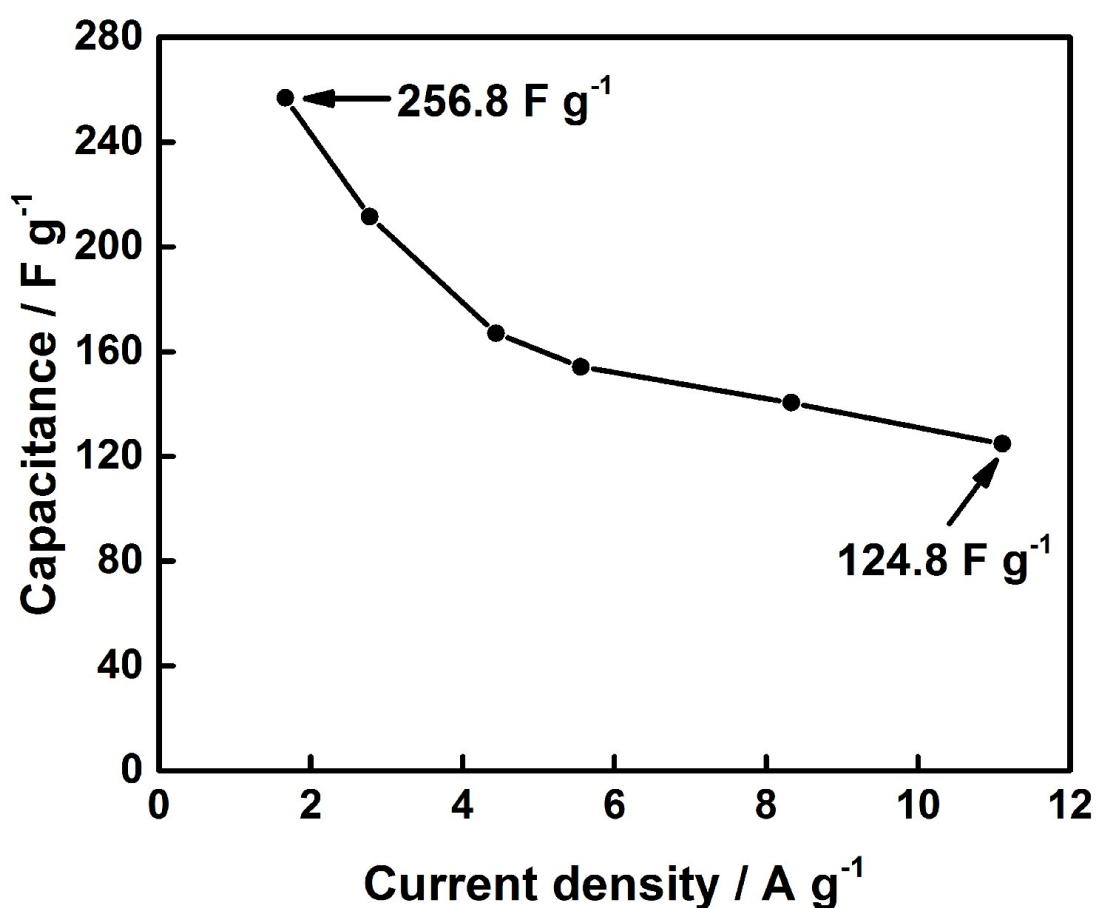


Fig.S6. The corresponding specific capacitance at different current densities of CNT-Ni₃S₂-CNT-A//AC asymmetrical supercapacitors (ASCs).

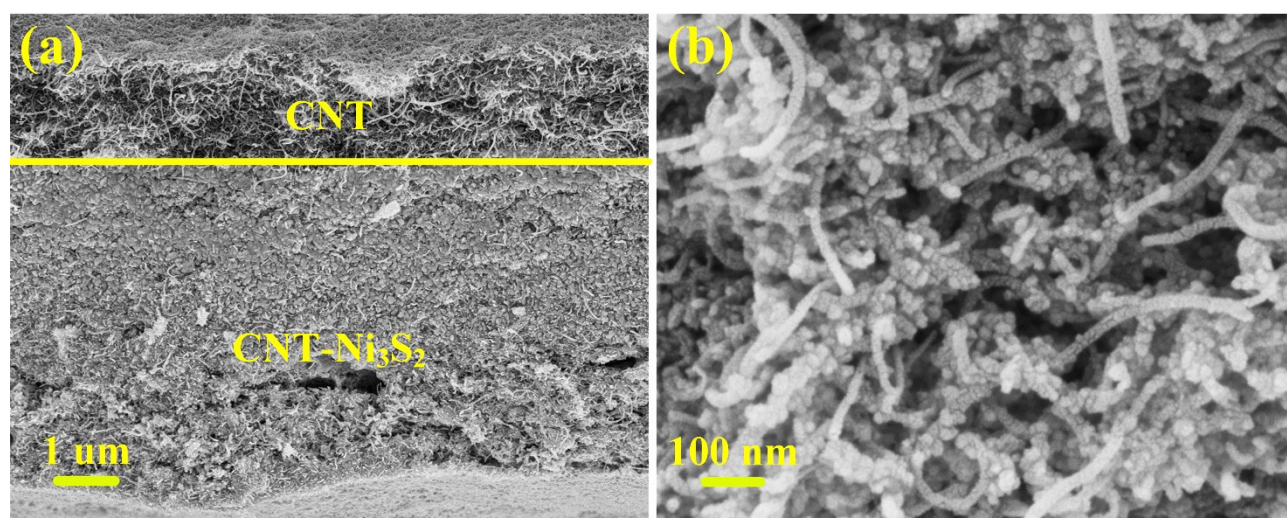


Fig.S7. The SEM images of CNT-Ni₃S₂-CNT-A after cycling. (a) The structure of CNT-Ni₃S₂-CNT-A. (b) The CNT-Ni₃S₂ part of CNT-Ni₃S₂-CNT-A.

Table S1 S_{BET} and V_{p} values of samples.

Samples	CNT-Ni ₃ S ₂	CNT-Ni ₃ S ₂ -A	CNT-Ni ₃ S ₂ -CNT-A
S_{BET} (m ² ·g ⁻¹)	83	105	125
V_{p} (m ³ ·g ⁻¹)	0.46	0.54	0.70

Table S2 Comparison of electrochemical performances of the other asymmetric supercapacitors and this work.

Materials	Current densities / A g ⁻¹	Sc / F g ⁻¹	Energy densities / Wh·Kg ⁻¹	Power densities / W·Kg ⁻¹	Ref
Co ₃ O ₄ /CoMoO ₄ // CNT	3	128	45.2	400	[40]
Ni ₃ S ₂ @ β -NiS // AC	1	133.8	55.1	925.9	[41]
Ni-Co-S/G // PCNS	1	122	43.3	800	[2]
NiCo-10 // AC	5	93.4	51.5	825	[42]
Ni ₃ S ₂ // AC	4	134	69.5	1800	[43]
CNT-Ni ₃ S ₂ -CNT-A // AC	5.6	154.2	75.2	2416	This work