

Supporting information

NiCo₂S₄/Carbon Nanotube Nanocomposites with Chain-like Architecture for Enhanced Supercapacitor Performance

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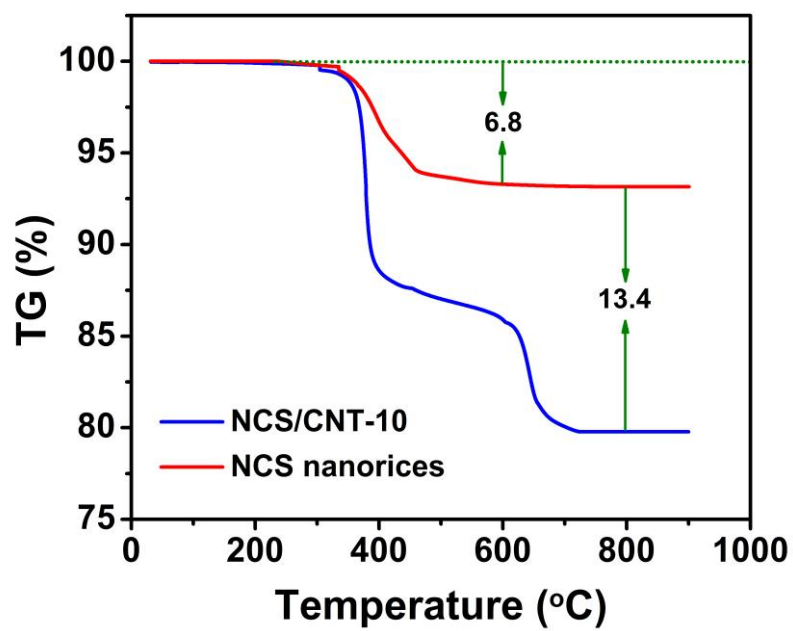


Fig. S1 TG curves of NCS/CNT-10 composite and NCS nanorices in air at a heating rate of 10 °C min⁻¹.

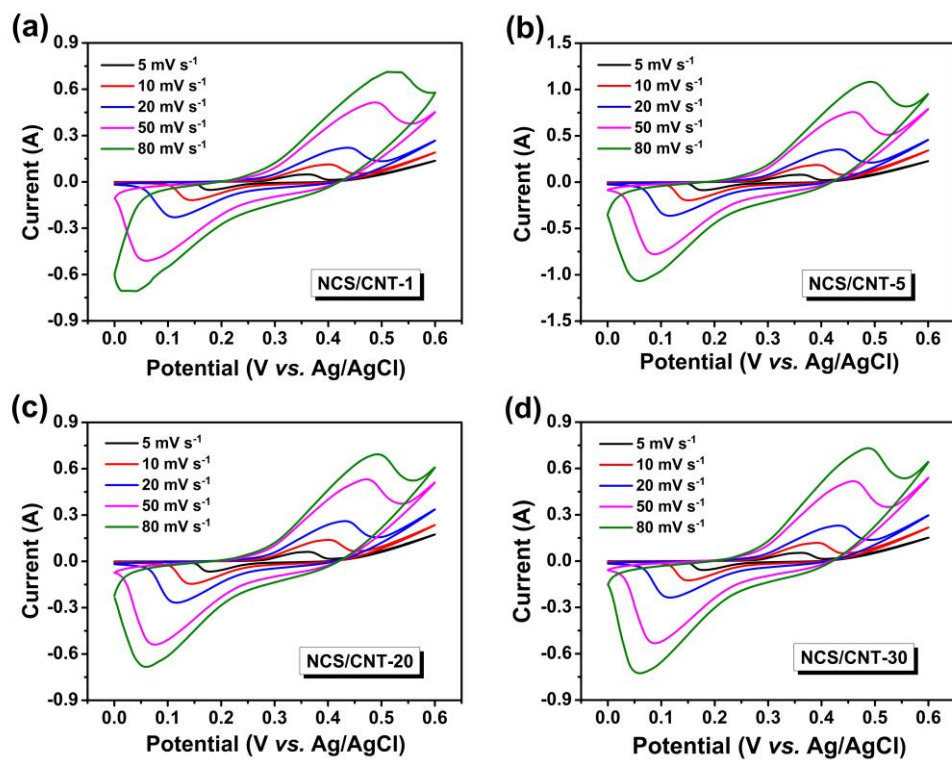


Fig. S2 CV curves at different scan rates recorded from NCS/CNT nanocomposites with different adding amount of CNT: (a) NCS/CNT-1; (b) NCS/CNT-5; (c) NCS/CNT-20; (d) NCS/CNT-30.

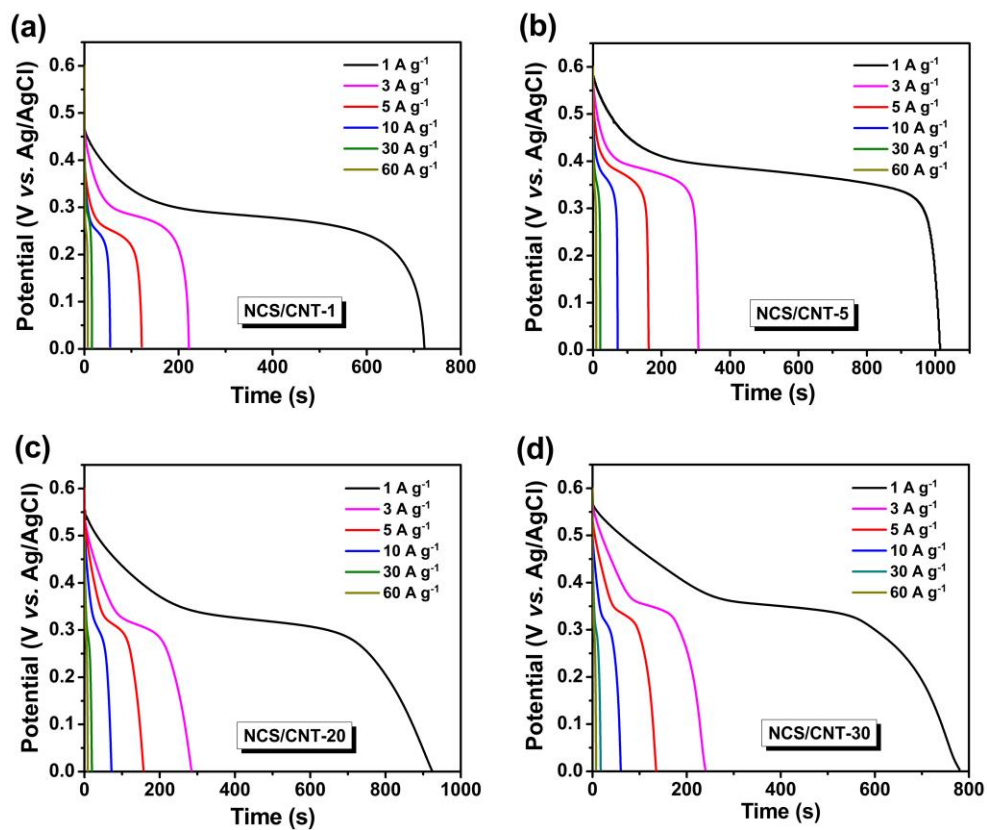


Fig. S3 CD curves at different current densities recorded from NCS/CNT nanocomposites with different adding amount of CNT: (a) NCS/CNT-1; (b) NCS/CNT-5; (c) NCS/CNT-20; (d) NCS/CNT-30.

Table S1 Comparison of the key performance characteristics of different NiCo₂S₄-based electrodes for supercapacitors.

Sample	Specific capacitance	Rate retention	Current range	Ref.
NiCo ₂ S ₄ nanotubes	933 F g ⁻¹ (1 A g ⁻¹)	58.9 %	1-5 A g ⁻¹	1
Urchin-like NiCo ₂ S ₄	1025 F g ⁻¹ (1 A g ⁻¹)	77.3 %	1-20 A g ⁻¹	2
NiCo ₂ S ₄ nanoparticles on graphene	1708 F g ⁻¹ (1 A g ⁻¹)	68 %	1-40 A g ⁻¹	3
NiCo ₂ S ₄ microsphere/ acetylene black	768 F g ⁻¹ (2 A g ⁻¹)	70.3 %	2-100 A g ⁻¹	4
CoNi ₂ S ₄ /CNT	2094 F g ⁻¹ (1 A g ⁻¹)	72 %	1-10 A g ⁻¹	5
CoNi ₂ S ₄ /graphene	2009 F g ⁻¹ (1 A g ⁻¹)	49.8 %	1-20 A g ⁻¹	6
NiCo ₂ S ₄ -RGO	1451 F g ⁻¹ (3 A g ⁻¹)	52.3 %	3-20 A g ⁻¹	7
NiCo ₂ S ₄ /CNT	2210 F g ⁻¹ (1 A g ⁻¹)	72 %	1-60 A g ⁻¹	Our work

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Table S2 Charge transfer resistance (R_{ct}) and internal resistance (R_s) of synthesized samples.

Sample	R_{ct} (Ω)	R_s (Ω)
NCS/CNT-1	1.328	0.623
NCS/CNT-5	0.491	0.199
NCS/CNT-10	0.268	0.092
NCS/CNT-20	0.637	0.175
NCS/CNT-30	1.004	0.671
NCS	0.371	0.912