

Electronic Supplementary Material (ESI) for RSC Advances.

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Supplementary Information

**Co₃O₄ nanocrystals derived from zeolitic imidazolate framework on Ni foam as
high-performance supercapacitor electrode material**

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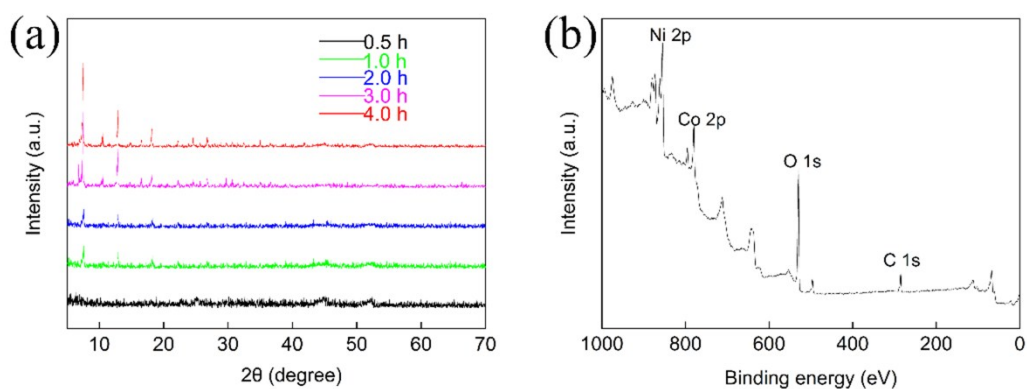


Fig. S1. (a) XRD pattern of ZIF-67 membranes prepared by one step in situ method for different synthesis times (0.5, 1, 2, and 4 h), (b) the full-survey-scan XPS spectrum of as-prepared Ni foam/Co₃O₄ electrode.

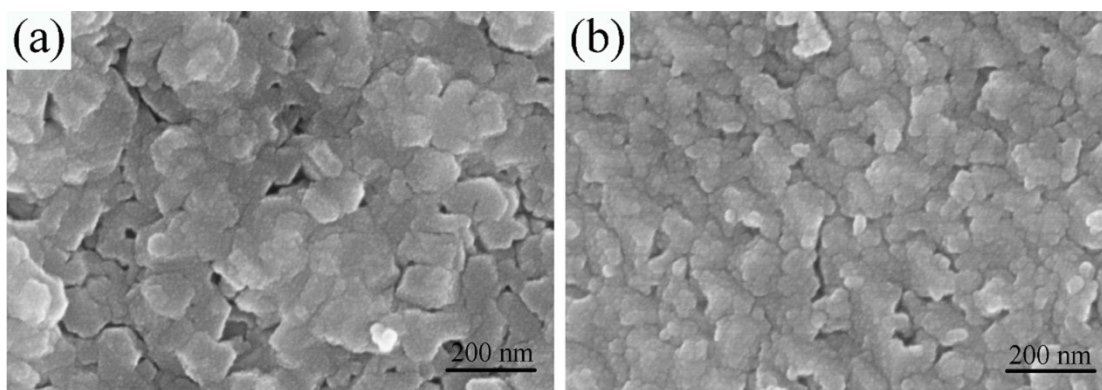


Fig. S2. High-resolution SEM images of (a) before-test Co₃O₄ nanocrystals and (b) after-test Co₃O₄ nanocrystals.

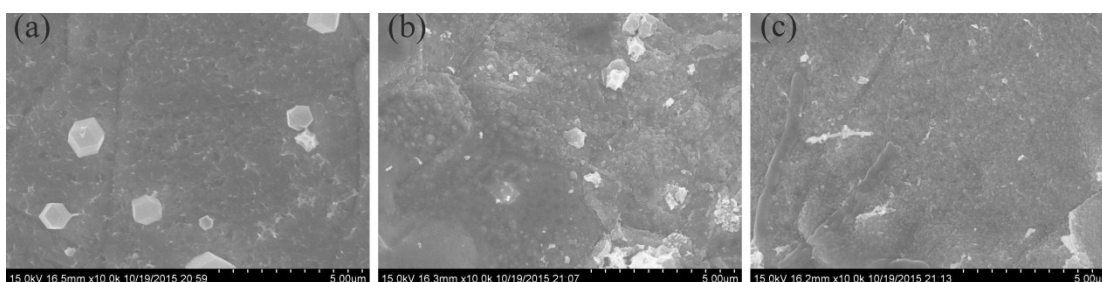


Fig. S3. Low-resolution SEM images of (a) Ni foam/ZIF-67, (b) before-test Ni foam/Co₃O₄ and (c) after-test Ni foam/Co₃O₄.

Table. S1. Summary of the representative Co₃O₄ electrode materials for supercapacitors

Typical examples	Specific capacitance	Rate performance	Ref.
Two-dimensional (2D) Co ₃ O ₄ thin sheets	1500 F g ⁻¹ at 1 A g ⁻¹	828 F g ⁻¹ at 10 A g ⁻¹	1
One-dimensional (1D) hierarchical hollow Co ₃ O ₄ nanotubes	1006 F g ⁻¹ at 1 A g ⁻¹	512 F g ⁻¹ at 10 A g ⁻¹	2
Co ₃ O ₄ nanopillar array incorporated in hierarchical porous carbon	978.9 F g ⁻¹ at 0.5 A g ⁻¹	444.4 F g ⁻¹ at 10 A g ⁻¹	3
Mesoporous vertical Co ₃ O ₄ nanosheet arrays on nitrogen-doped graphene foam	451 F g ⁻¹ at 1 A g ⁻¹	260 F g ⁻¹ at 20 A g ⁻¹	4
Co ₃ O ₄ @highly ordered macroporous carbon	1307 F g ⁻¹ at 1 A g ⁻¹	798 F g ⁻¹ at 20 A g ⁻¹	5
Multi-shelled Co ₃ O ₄ hollow microspheres	394.4 F g ⁻¹ at 2 A g ⁻¹	360 F g ⁻¹ at 10 A g ⁻¹	6
Core-shell structured PANI-Co ₃ O ₄ nanocomposites	1184 F g ⁻¹ at 1.25 A g ⁻¹	735 F g ⁻¹ at 25 A g ⁻¹	7
Co ₃ O ₄ nanoflowers grown on Ni foam	1936.7 F g ⁻¹ at 0.2 A g ⁻¹	1309.4 F g ⁻¹ at 3 A g ⁻¹	8
Co ₃ O ₄ nanocrystals derived from zeolitic imidazolate framework on Ni foam	1680 F g ⁻¹ at 0.5 A g ⁻¹	980 F g ⁻¹ at 15 A g ⁻¹	Present work

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