Electronic Supplementary Information

Hollow shell-in-shell Ni_3S_4@Co_9S_8 tubes derived from core–shell Ni-MOF-74@Co-MOF-74 as efficient faradaic electrodes

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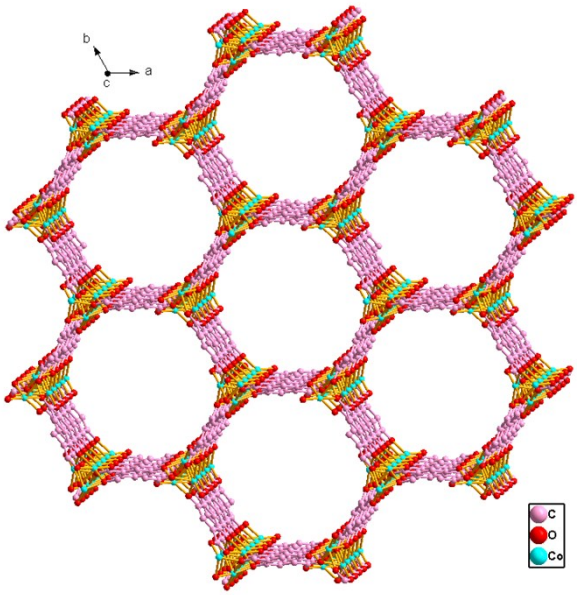


Fig. S1 The 3D porous framework of Co-MOF-74, all H atoms are not depicted for clarity.

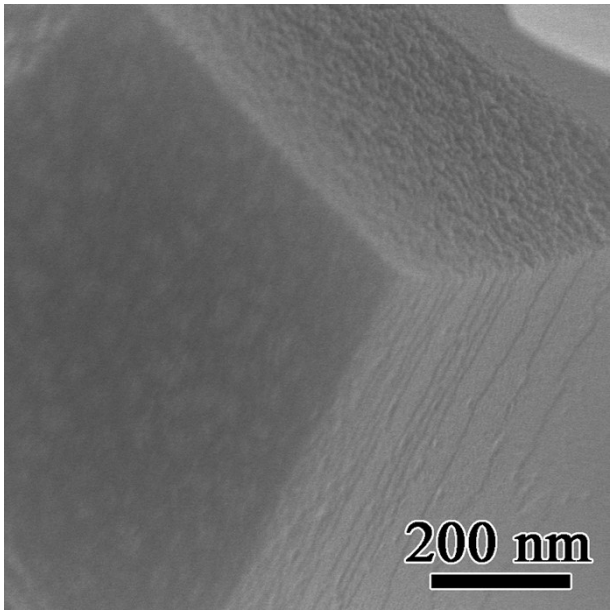


Fig. S2 Ni-MOF-74 shells grow layer by layer on the surface of Co-MOF-74 seeds.

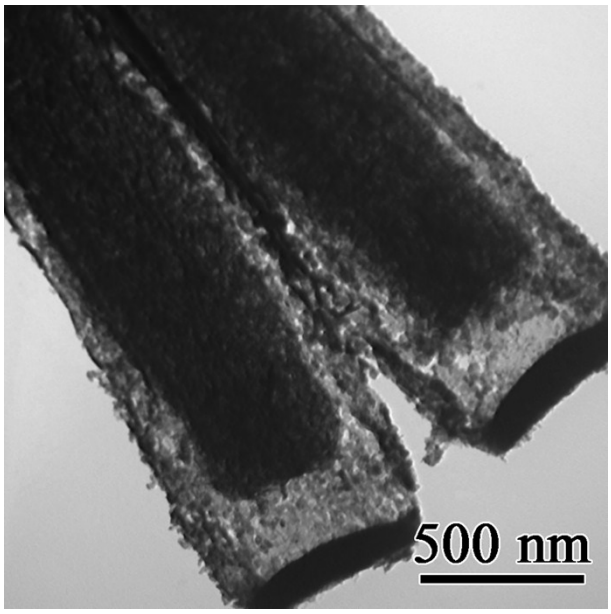


Fig. S3 TEM image of the Co_9S_8/Co-MOF-74 yolk-shelled structures formed after reaction for 1 h.

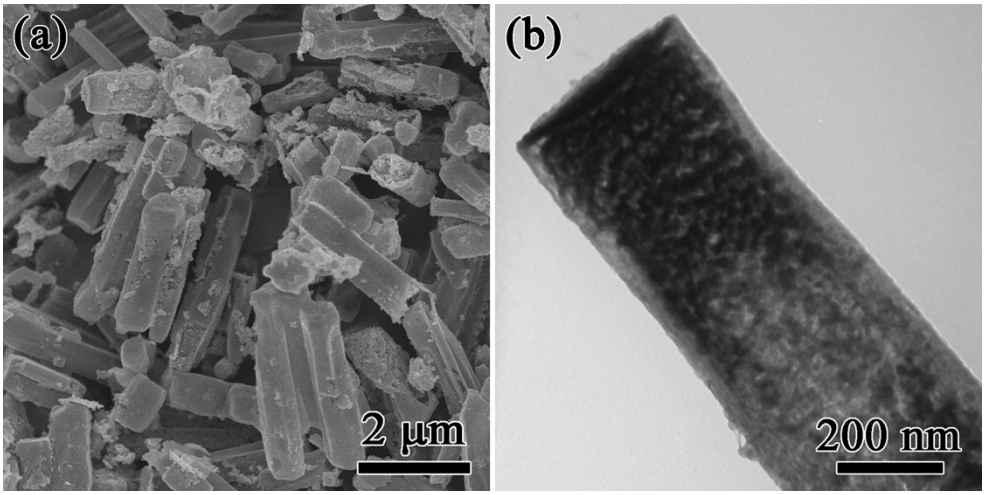


Fig. S4 SEM and TEM images of as-obtained products with 0.2 g of Na_2S.

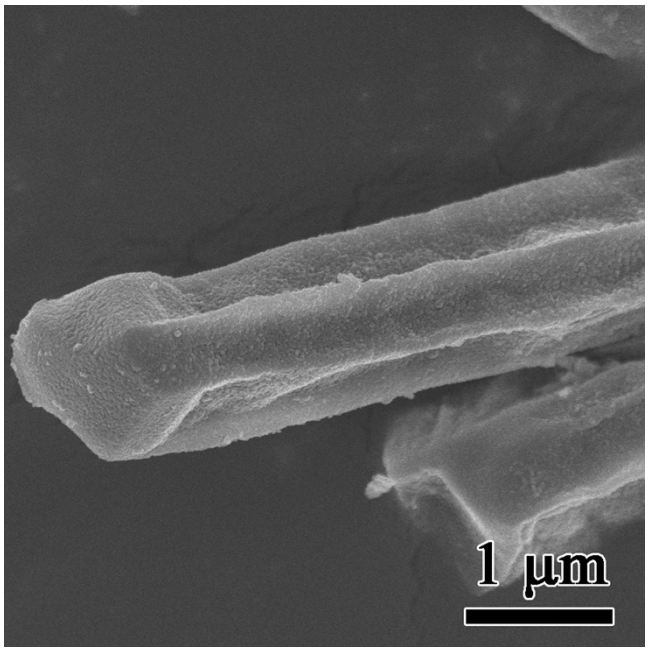


Fig. S5 SEM image of as-obtained products with 1.0 g of Na_2S.

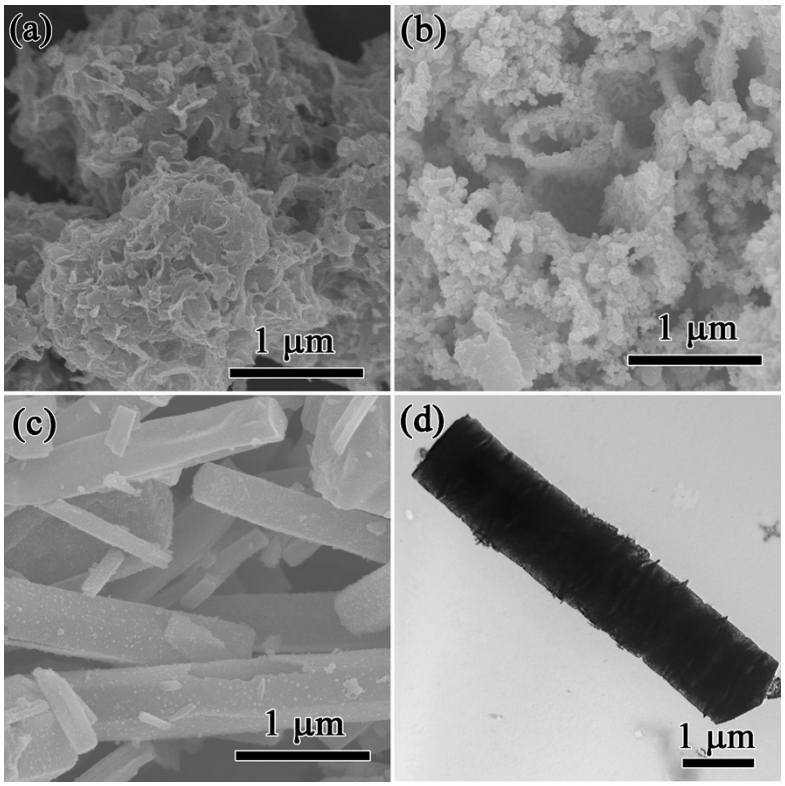
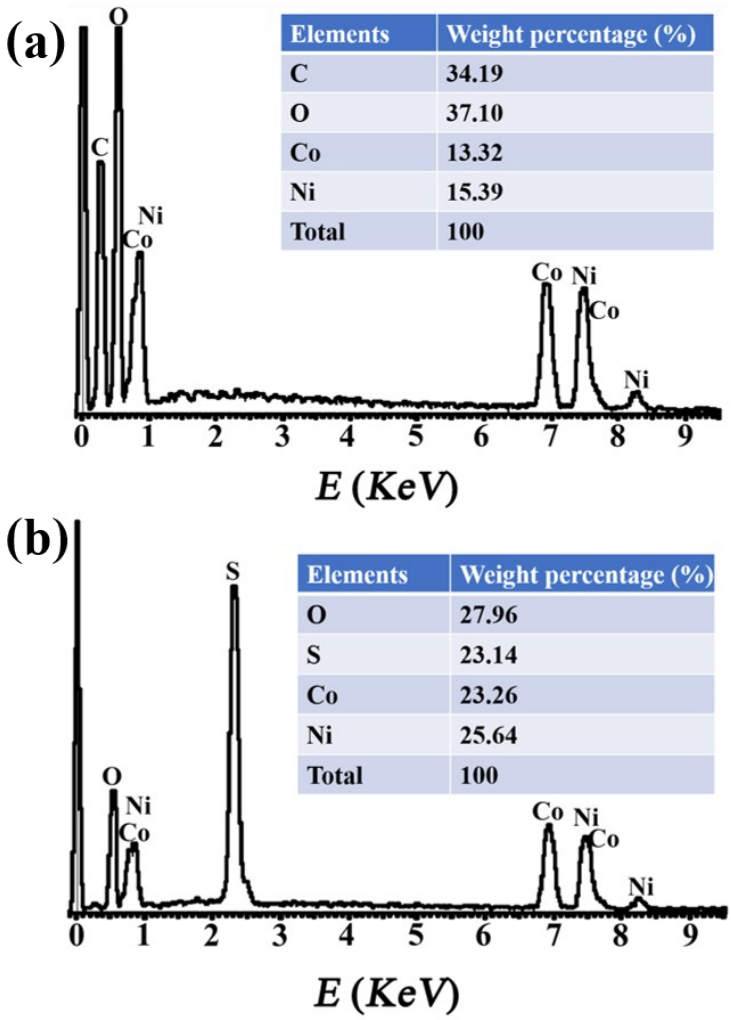


Fig. S6 SEM images of as-obtained product in pure water (a), V_{H2O}:V_{EtOH}=2:1 (b), V_{H2O}:V_{EtOH} =1:2 (c) and TEM image of as-obtained product in absolute ethanol (d).



Elements	Weight percentage (%)
C	34.19
O	37.10
Co	13.32
Ni	15.39
Total	100

Elements	Weight percentage (%)
O	27.96
S	23.14
Co	23.26
Ni	25.64
Total	100

Fig. S7 EDX characterization results for the Ni-MOF-74@ Co-MOF-74 (a) and Ni_3S_4@Co_9S_8 (b).

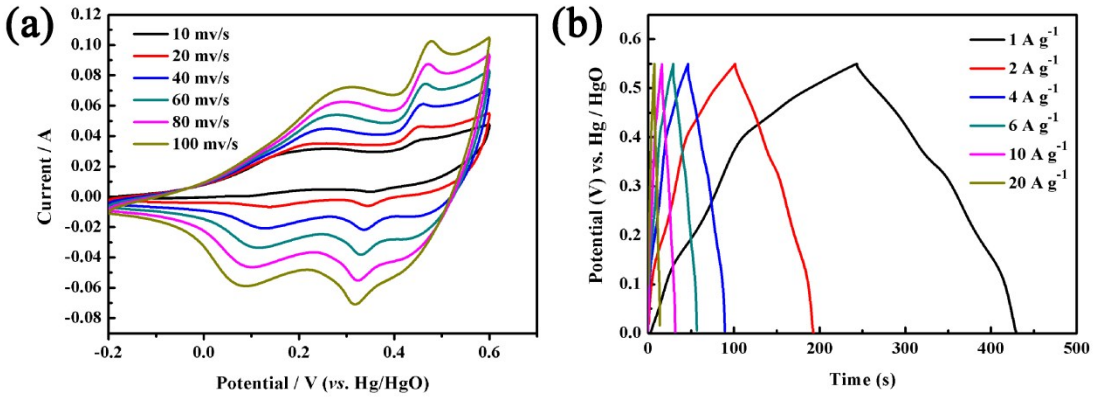


Fig. S8 (a) Cyclic voltammograms at various scan rates and (b) charge–discharge curves at different current densities of Co_9S_8 tubes.

Table S1 Comparison of specific capacity values for various sulfide-based electrodes.

Materials	Specific capacity	Current density	References
$NiCo_2S_4$	756 F g^{-1}	1 A g^{-1}	[1]
$CoS_{1.097}$	686 F g^{-1}	1 A g^{-1}	[2]
Co_9S_8/NS–C	734 F g^{-1}	1 A g^{-1}	[3]
NiS	1122.7 F g^{-1}	1 A g^{-1}	[4]
Co_9S_8@SNCC	429 F g^{-1}	1 A g^{-1}	[5]
CoSNC	360.1 F g^{-1}	1.5 A g^{-1}	[6]
Co_9S_8 DSTs	337.8 F g^{-1}	1 A g^{-1}	This work
Ni_3S_4@Co_9S_8 DSTs	1200 F g^{-1}	4 A g^{-1}	This work

References:

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