Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

Graphene foam supported multilevel network-like $NiCo_2S_4$ nanoarchitectures for robust lithium storage and efficient ORR catalysis

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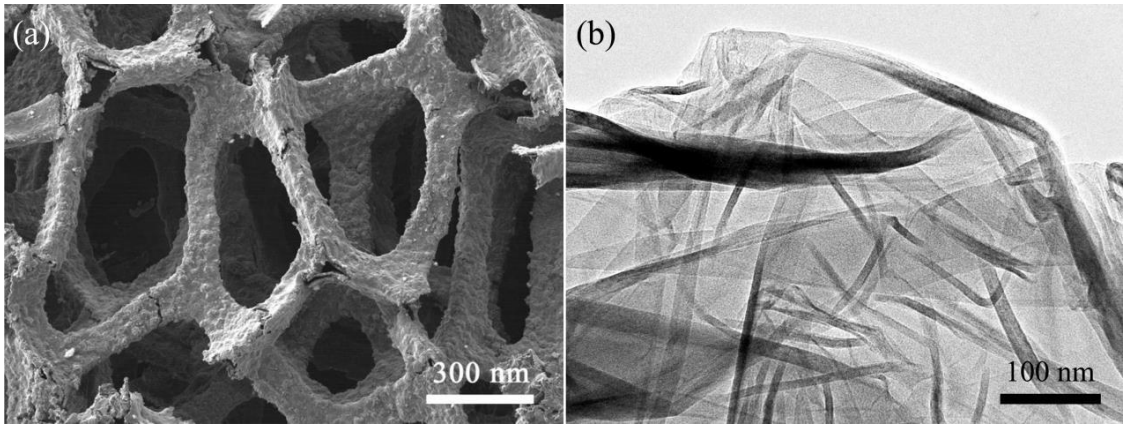

Fig. S1 Typical (a) SEM and (b) TEM images of three-dimensional graphene foam.

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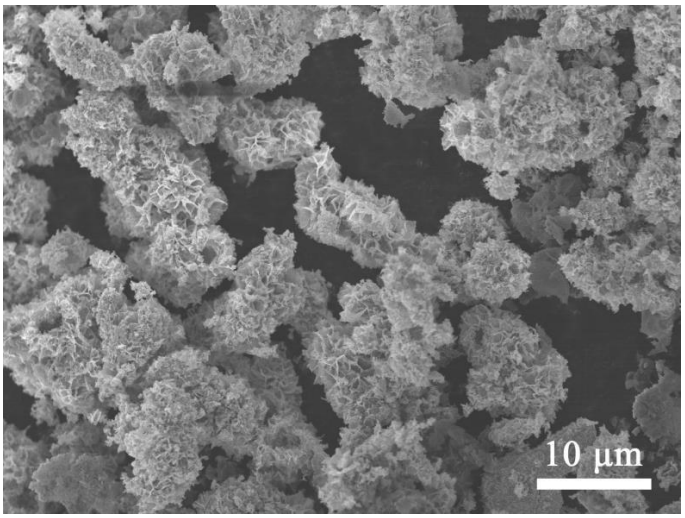

Fig. S2 Typical SEM image of pure $NiCo_2S_4$ powders.

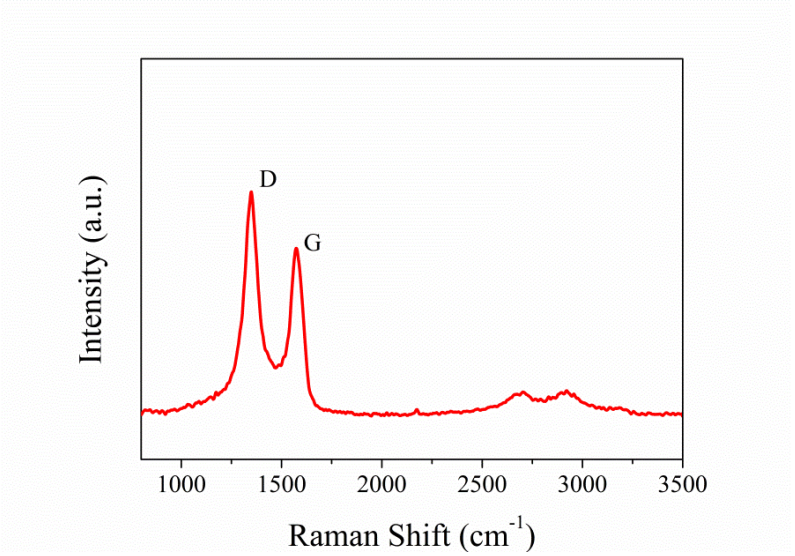

Fig.S3 Raman spectrum of three-dimensional graphene foam.

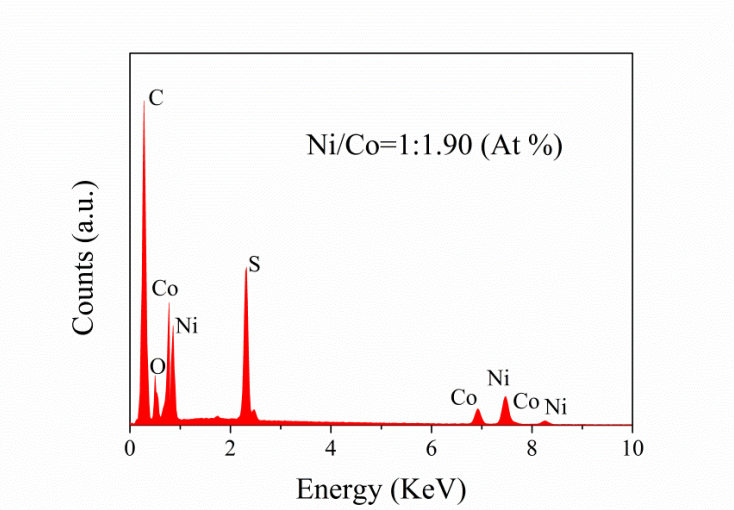

Fig. S4 EDX spectrum of multilevel 3D network-like $NiCo_2S_4$@3DGF composites.

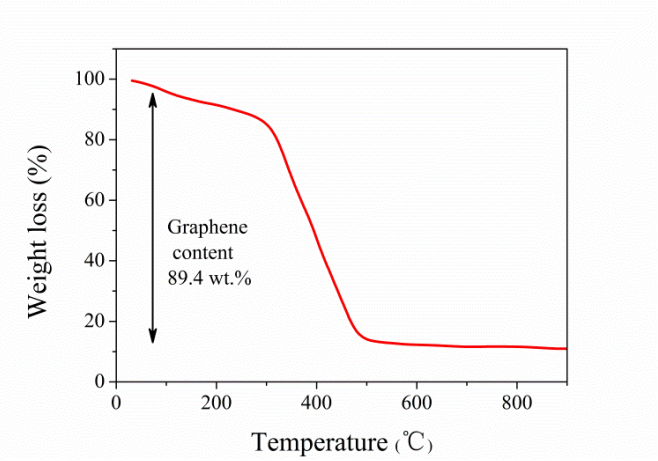

Fig. S5 TGA curve of multilevel 3D network-like $NiCo_2S_4$@3DGF composites.

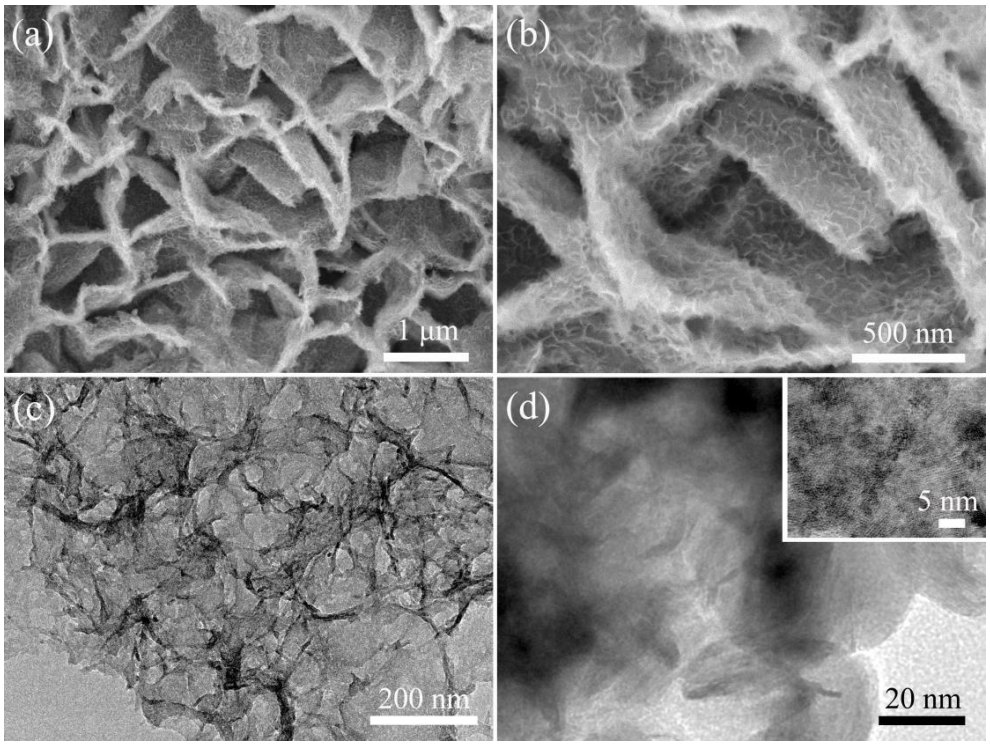

Fig. S6 (a, b) Typical SEM images of multilevel 3D network-like NiCo-precursor@3DGF composites at different magnifications; (c, d) TEM image of the NiCo-precursor nanosheets scratched from 3DGF substrate at different magnifications; the inset of (d) is the HRTEM image of the NiCo-precursor nanosheets scratched from 3DGF substrate.

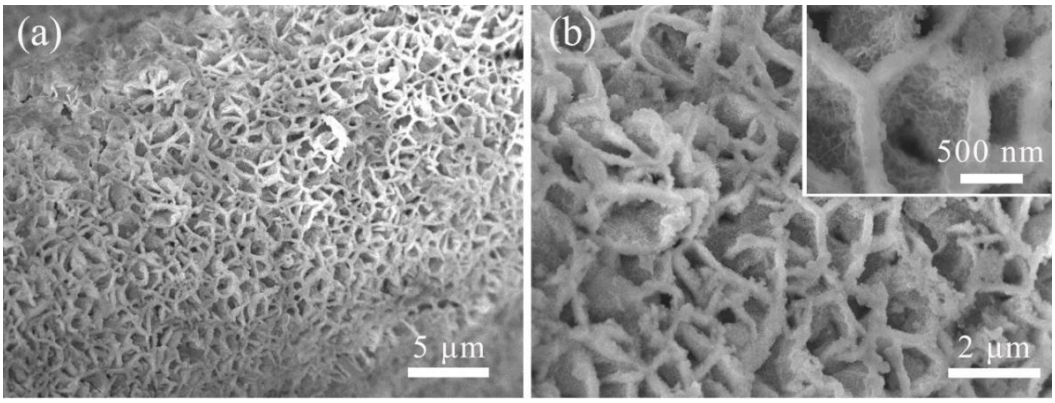

Fig. S7 Typical SEM images of multilevel 3D network-like $NiCo_2S_4$@3DGF composites after 150 cycles at different magnifications.

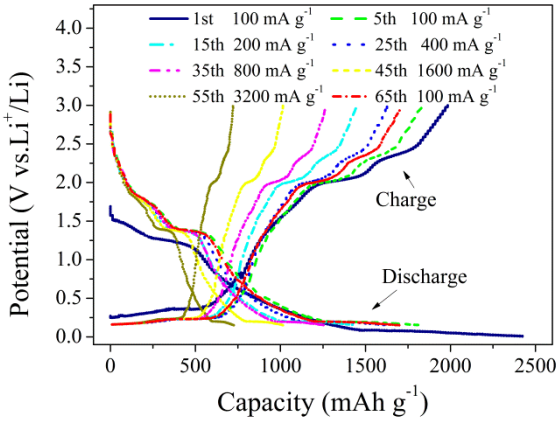

Fig. S8 Charge-discharge voltage profiles of the $NiCo_2S_4$@3DGF electrode at different current densities ranging from 100mAg^{-1} to 3200 mA g^{-1} in rate capability tests.

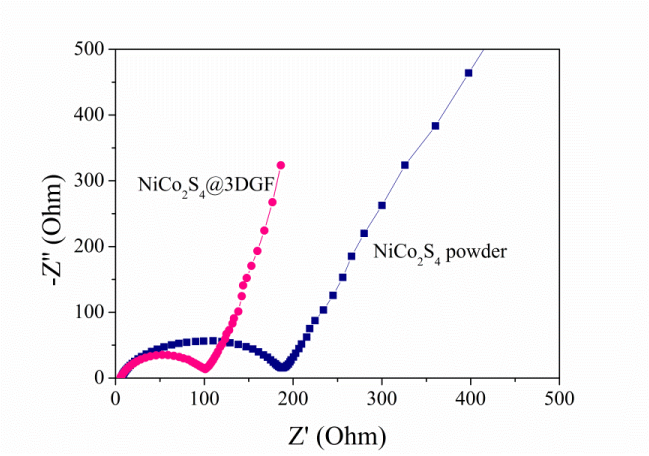

Fig. S9 Electrochemical impedance spectra of the $NiCo_2S_4$@3DGF electrode and

$NiCo_2S_4$ powders pasted electrode.