Electronic Supplementary Information(ESI)

Heterogeneous assembly of Ni-Co layered double hydroxide/sulfonated graphene nanosheets composites as battery-type materials for hybrid supercapacitors

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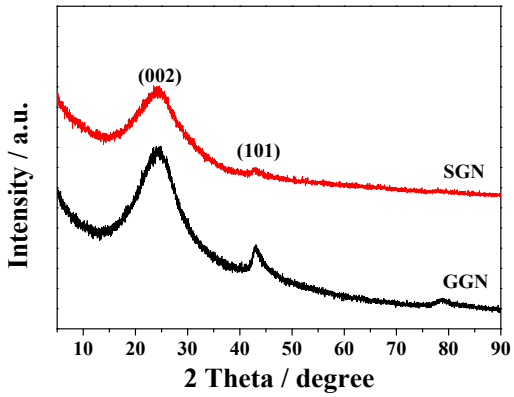

Fig. S1 XRD patterns of graphene-based carbon materials.

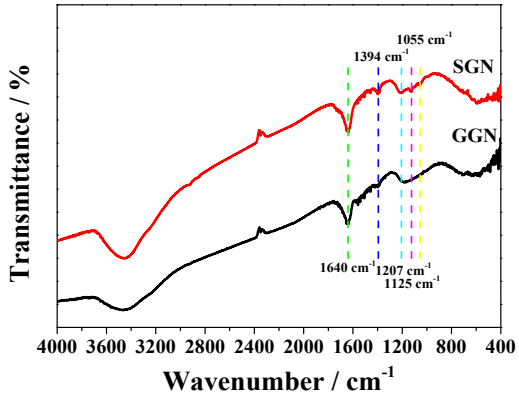

Fig. S2 FT-IR spectra of graphene-based carbon materials.

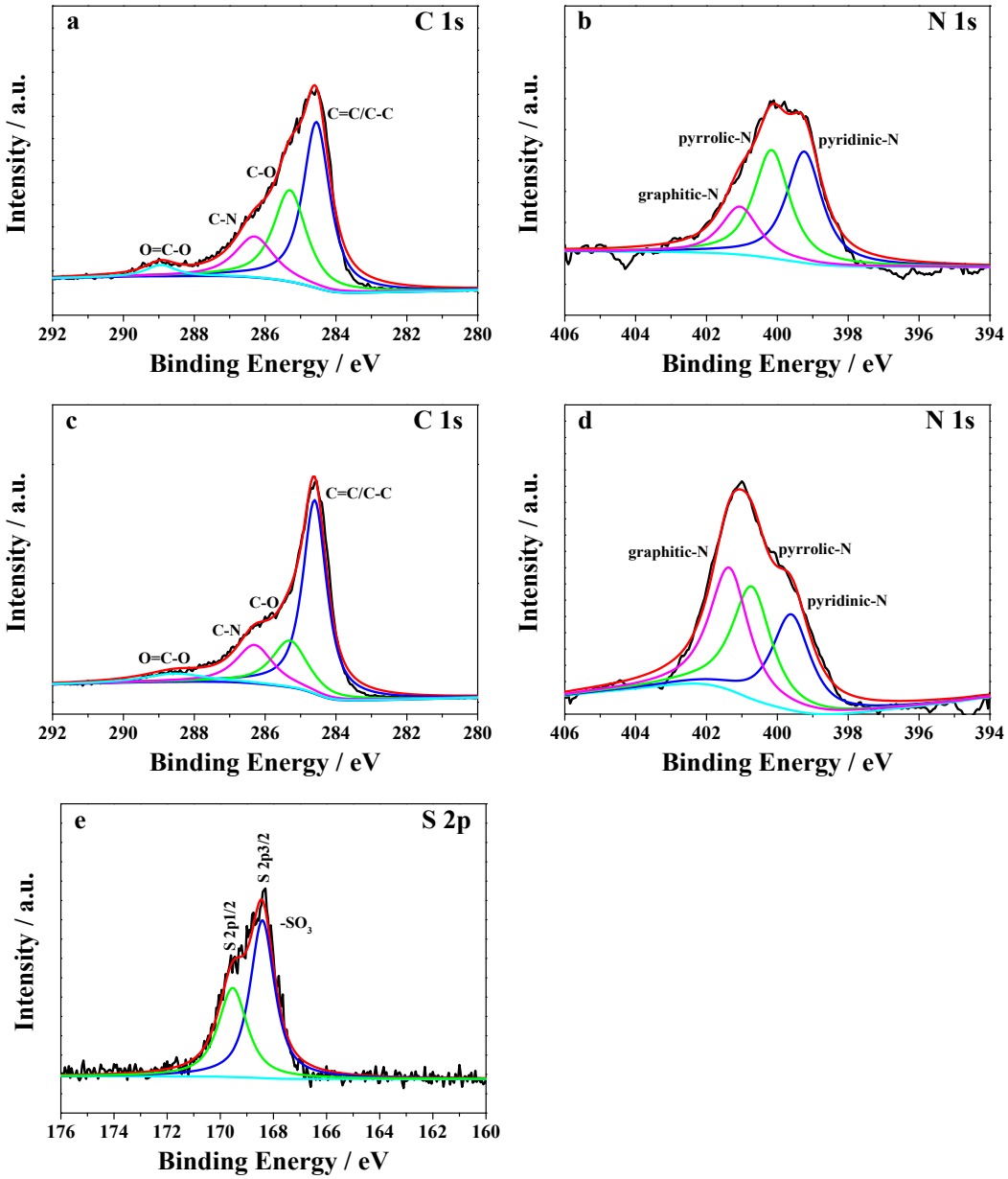

Fig. S3 XPS spectra of graphene-based carbon materials. (a) C 1s XPS spectra of GGN. (b) N 1s XPS spectra of GGN. (c) C 1s XPS spectra of SGN. (d) N 1s XPS spectra of SGN. (e) S 2p XPS spectra of SGN.

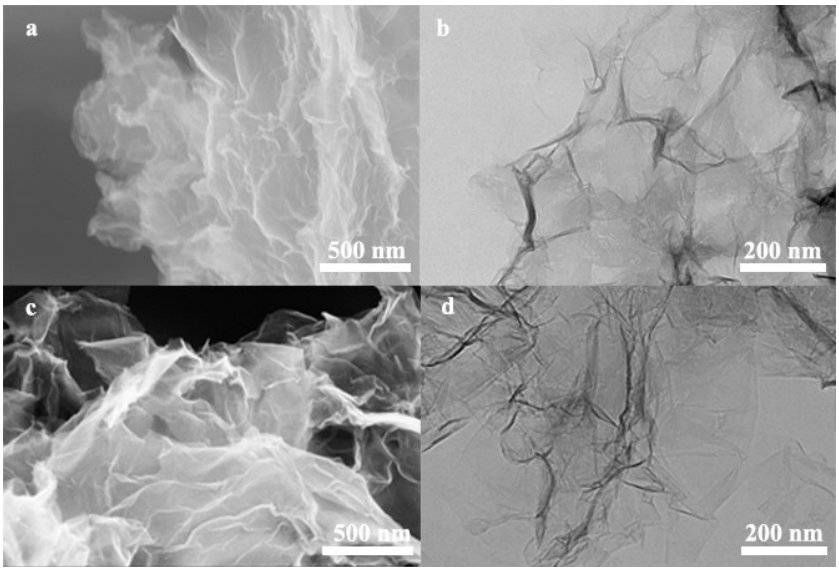

Fig. S4 Morphological characterizations of graphene-based carbon materials. (a) SEM image of GGN. (b) TEM image of GGN. (c) SEM image of SGN. (d) TEM image of SGN.

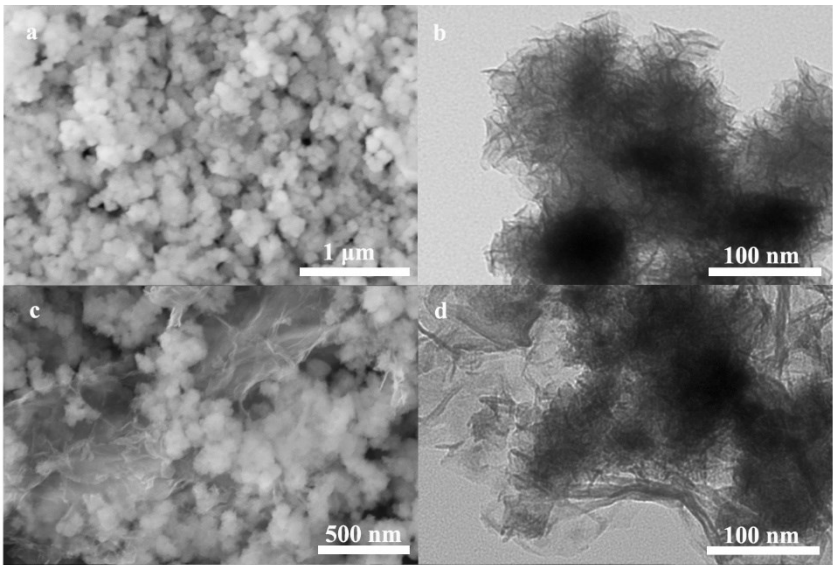

Fig. S5 Morphological characterizations of electrode materials. (a) SEM image of LDH-NO_3. (b) TEM image of LDH-NO_3. (c) SEM image of LDH/GGN. (d) TEM image of LDH/GGN.

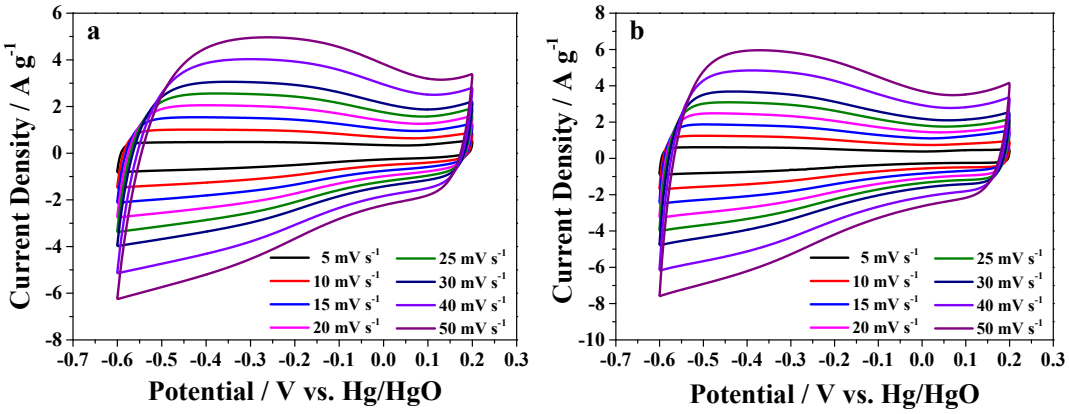

Fig. S6 CV measurements of graphene-based carbon materials at various scan rates. (a) CV curves of GGN. (b) CV curves of SGN.

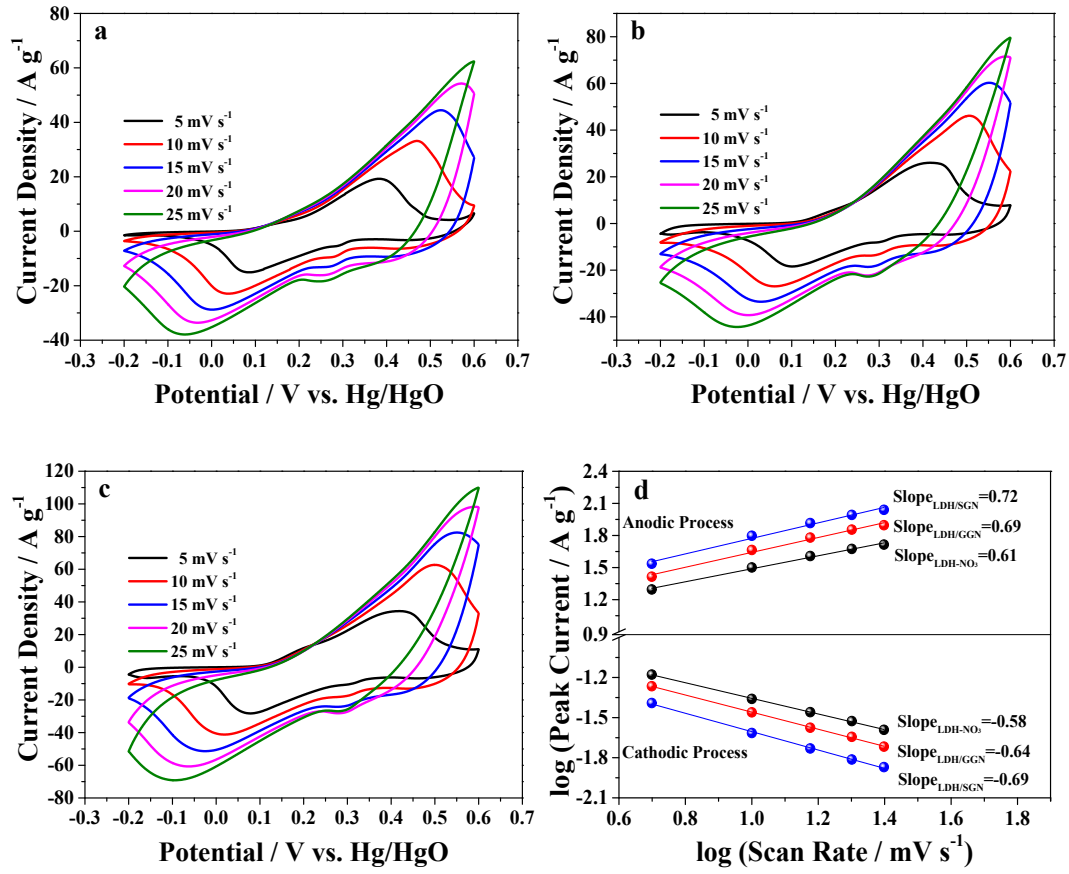

Fig. S7 CV measurements of electrode materials at various scan rates. (a) CV curves of LDH-NO_3. (b) CV curves of LDH/GGN. (c) CV curves of LDH/SGN. (d) Determination of slopes from double logarithmic curves between peak currents and scan rates.

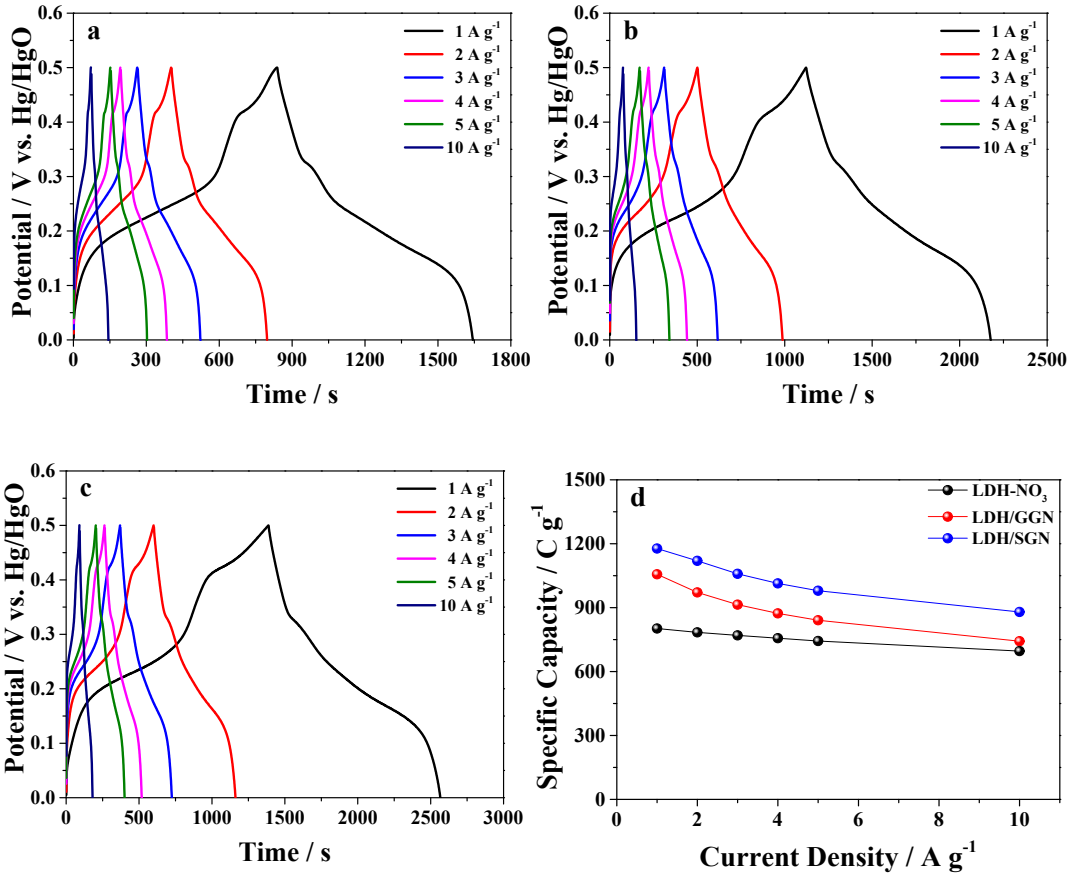

Fig. S8 GCD measurements of electrode materials at different current densities. (a) GCD profiles of LDH-NO_3. (b) GCD profiles of LDH/GGN. (c) GCD profiles of LDH/SGN. (d) Comparison of specific capacities at different current densities.

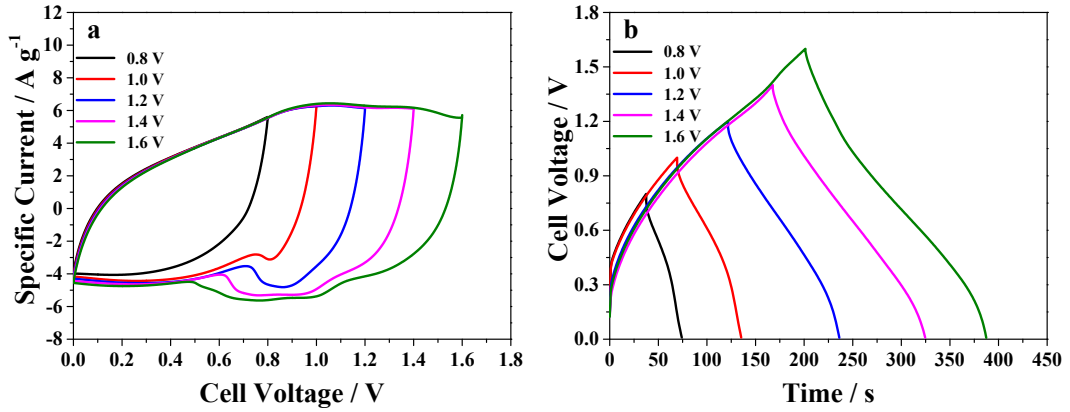

Fig. S9 Electrochemical performance of LDH/SGN//AC hybrid supercapacitor within different voltage windows. (a) CV curves. (b) GCD profiles.