

Supporting Information

Synergetic Compositional and Morphological Effects for Improved Na⁺ Storage

Properties of Ni₃Co₆S₈-Reduced Graphene Oxide Composite Powders

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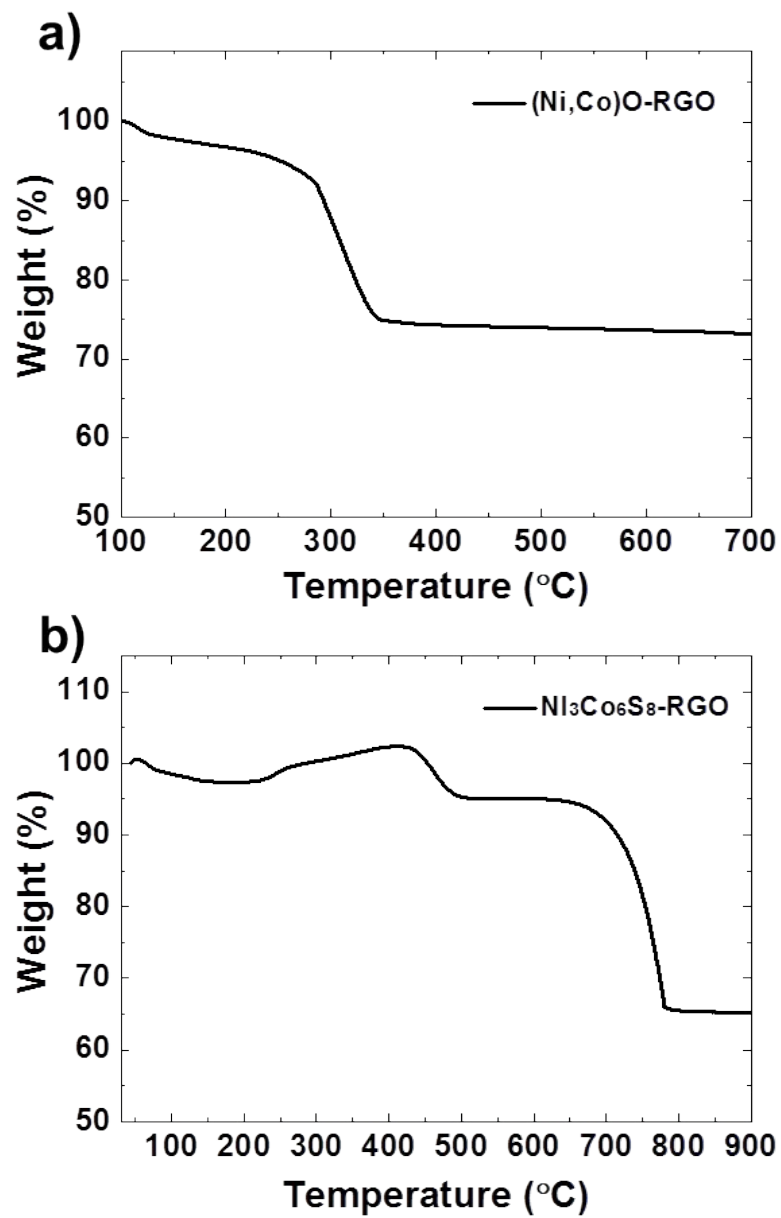


Fig. S1 TG curve of the (a) (Ni,Co)O-RGO and (b) Ni₃Co₆S₈-RGO composite powders.

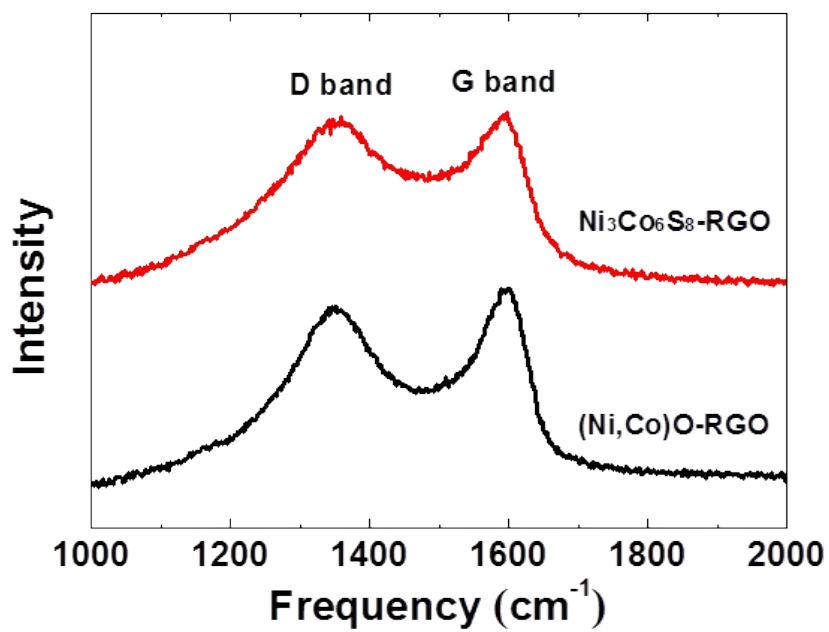


Fig. S2 Raman spectra of the (Ni,Co)O-RGO and Ni₃Co₆S₈-RGO composite powders.

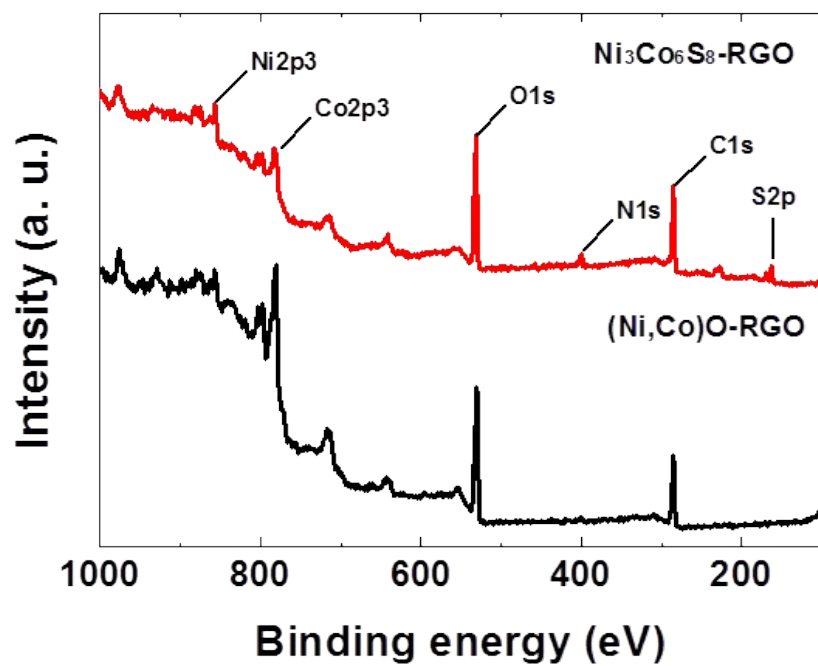


Fig. S3 X-ray photoelectron spectroscopy (XPS) spectra of the $(\text{Ni,Co})\text{O-RGO}$ and $\text{Ni}_3\text{Co}_6\text{S}_8\text{-RGO}$ composite powders.

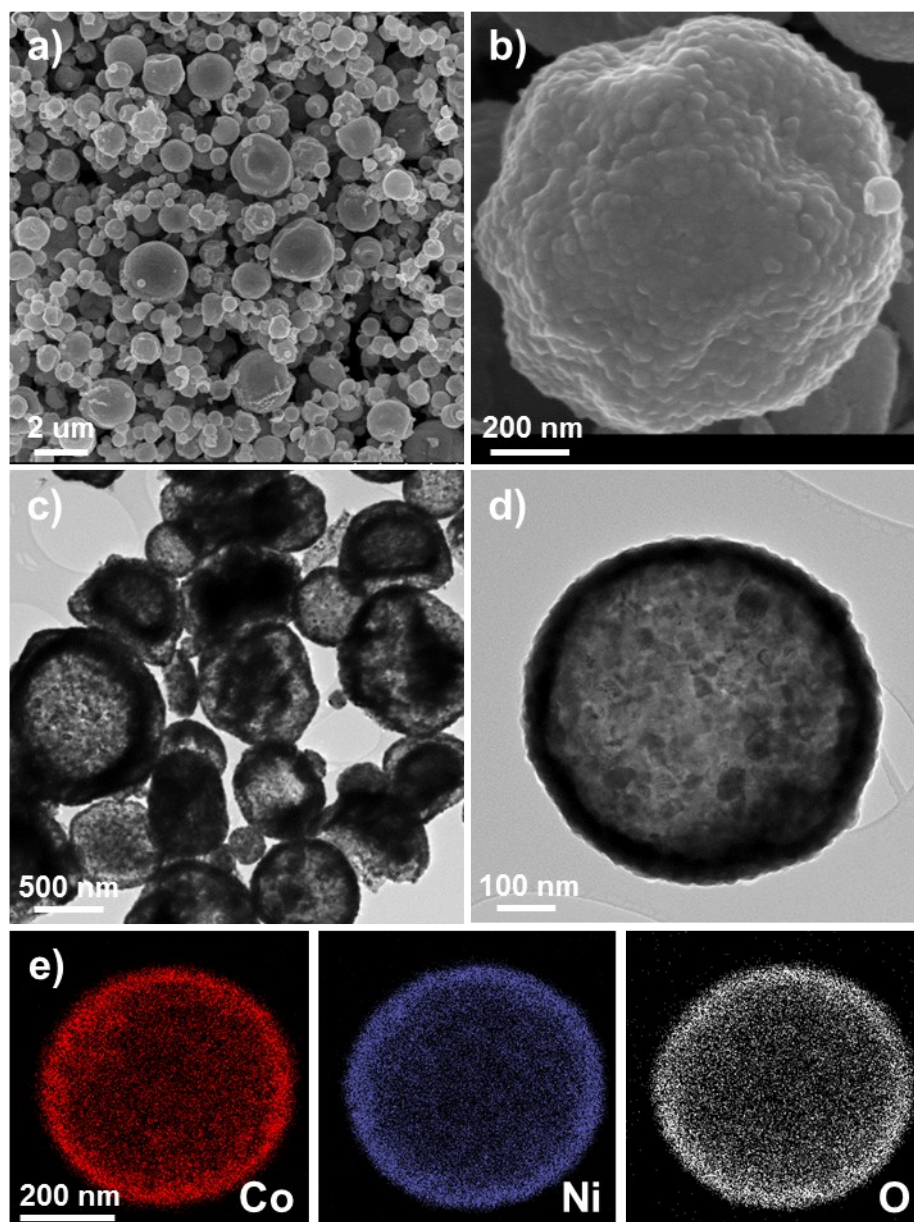


Fig. S4 Morphologies and elemental mapping images of the NiO-Co₃O₄ powders prepared by one-pot spray pyrolysis: (a) and (b) FE-SEM images, (c) and (d) TEM images, and (e) elemental mapping images of Ni, Co, and O components.

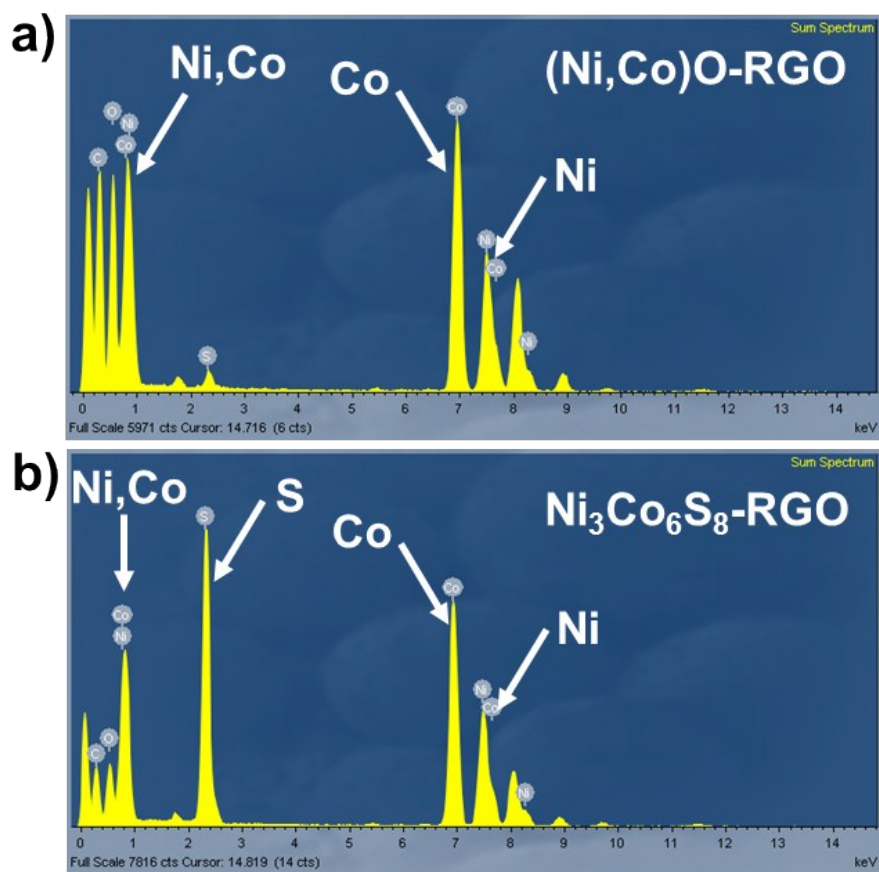


Fig. S5. EDS spectra of the (a) (Ni,Co)O-RGO and (b) Ni₃Co₆S₈-RGO composite powders.

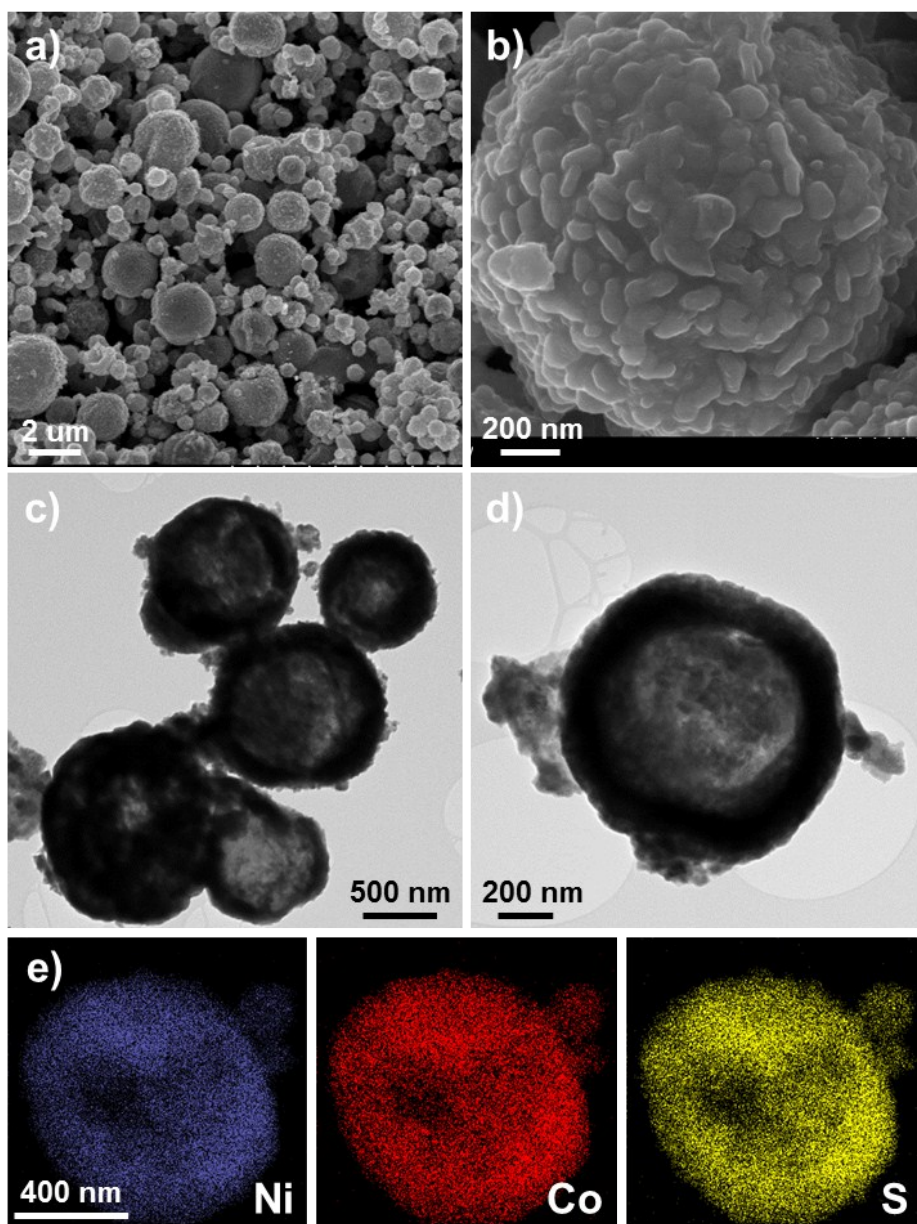


Fig. S6 Morphologies and elemental mapping images of the $\text{Ni}_3\text{Co}_6\text{S}_8$ powders prepared by simple sulfidation process: (a) and (b) FE-SEM images, (c) and (d) TEM images, and (e) elemental mapping images of Ni, Co, and S components.

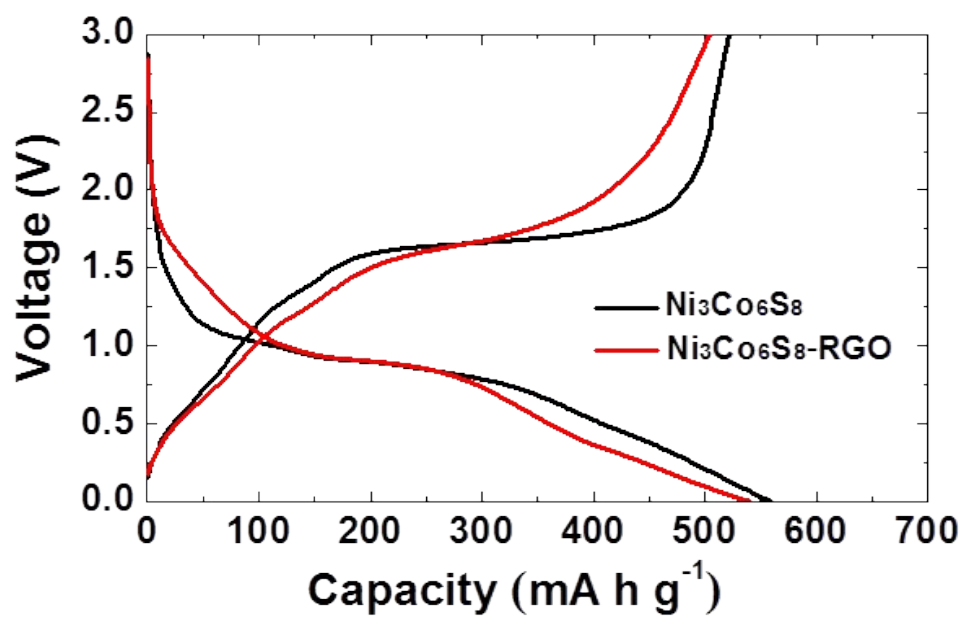


Fig. S7 Charge and discharge curves for the 2nd cycles of the Ni₃Co₆S₈ and Ni₃Co₆S₈-RGO composite powders.

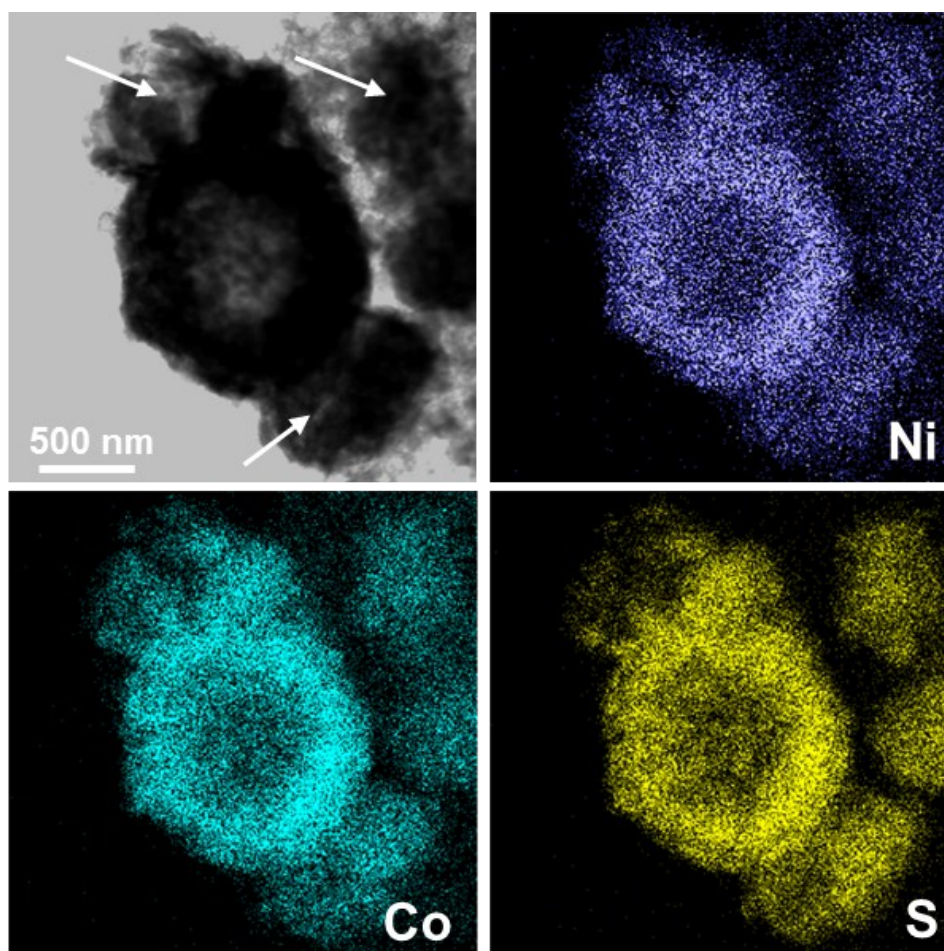


Fig. S8 TEM and elemental mapping images of the $\text{Ni}_3\text{Co}_6\text{S}_8$ powders obtained after 50 cycles.

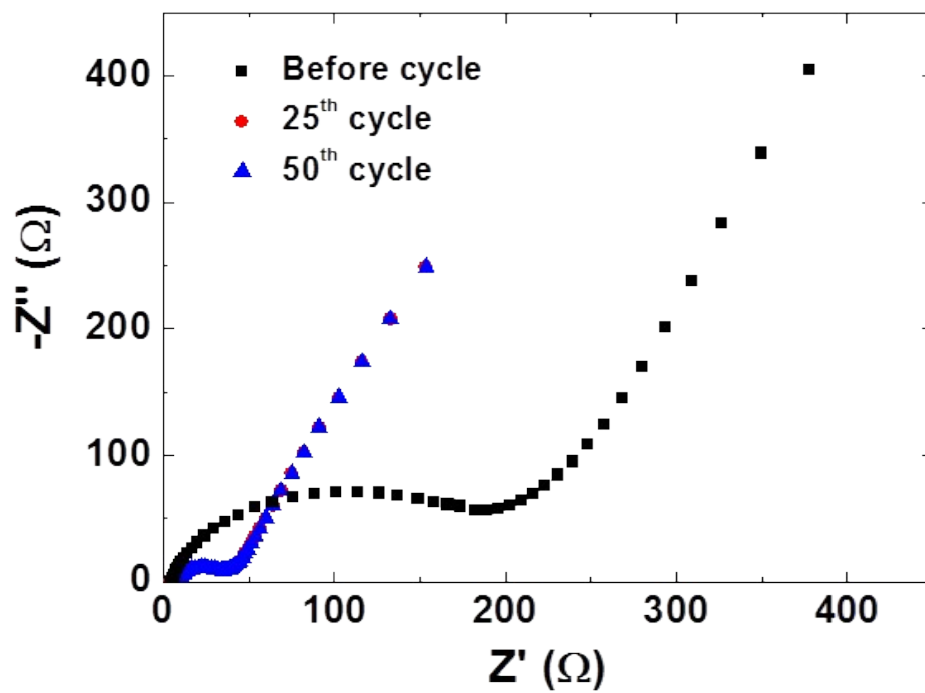


Fig. S9 EIS spectra of the Ni₃Co₆S₈-RGO powders before and after 25st and 50th cycles.