

Supporting Information

Ni-CoSe₂ heterojunction coated by N-doped carbon for modified separators of high-performance Li-sulfur batteries

Kai Wang,^a Haiqin Yang,^a Ruiqiang Yan,^{*a} Cairong Chen,^b Chenglin Wu,^{ac} Wei Chen,^a Zhicai He,^a Guobo Huang,^{*a} and Ling Chang^{*acd}

^a School of Pharmaceutical and Chemical Engineering, Taizhou University, Taizhou 318000, China

^b Taizhou Prefectural Center for Disease Control and Prevention, Taizhou 318000, China

^c Biomedical Industry Research Institute of Taizhou, Taizhou University, Taizhou 318000, China

^d Department of Chemistry, Zhejiang University, Hangzhou 310027, China

* Correspondence: yanrq@tzc.edu.cn (R.Q.Y.); 513493405@qq.com (G.B.H.); changling@zju.edu.cn (L.C.).

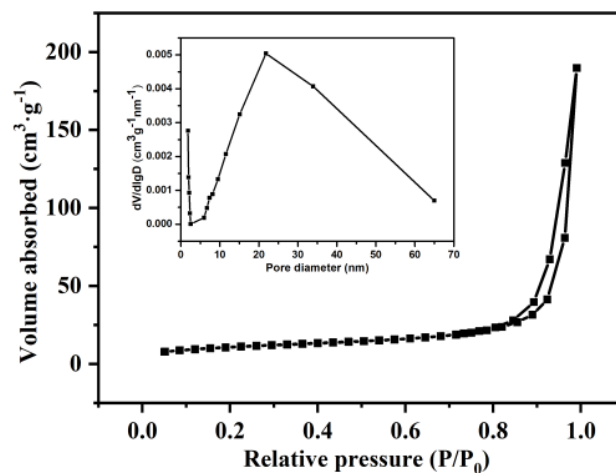


Fig. S1 BET and pore-size distribution of the Ni-CoSe₂@NC composite.

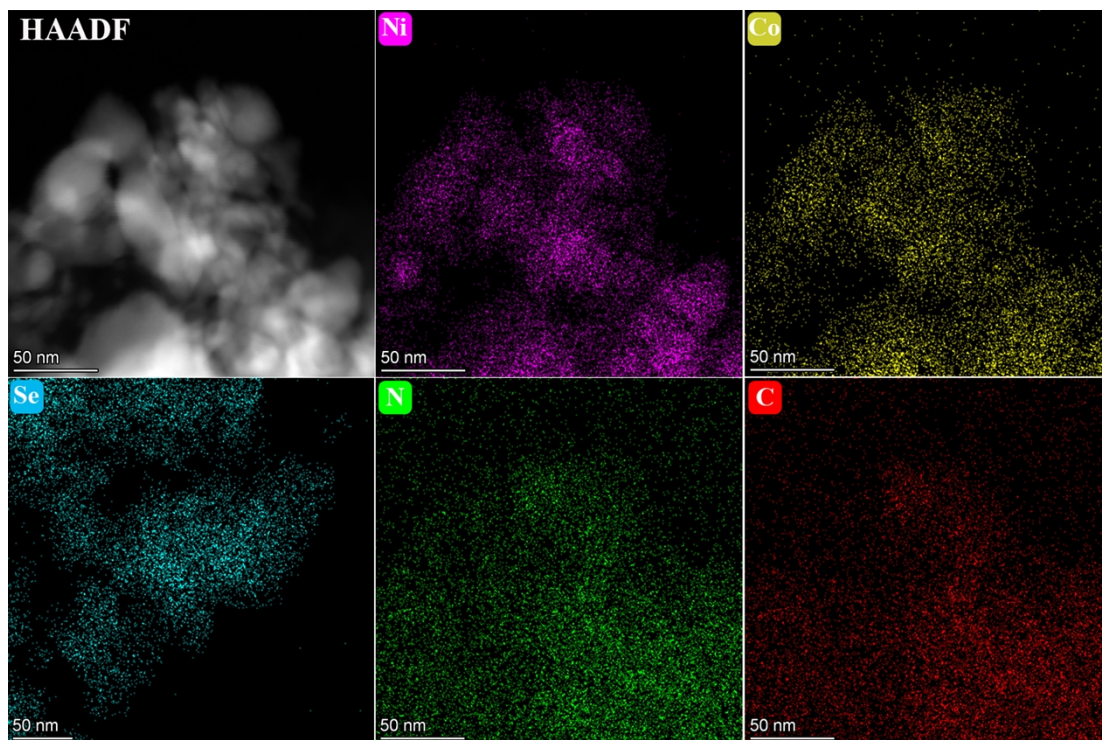


Fig. S2 EDS mapping of Ni-CoSe₂@NC composite.

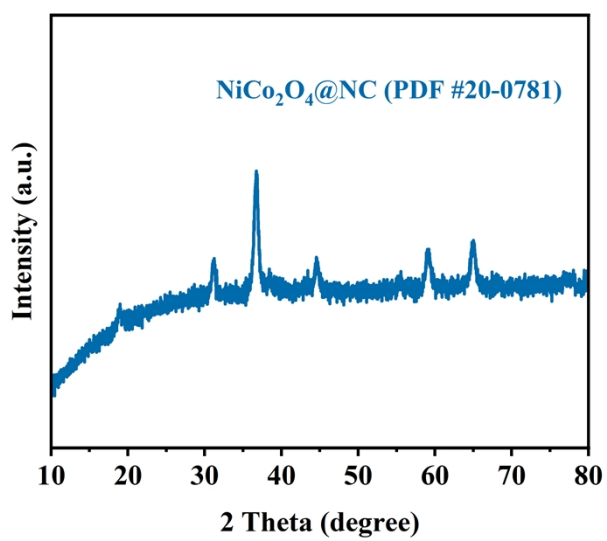


Fig. S3 XRD pattern of the NiCo₂O₄@NC intermediate.

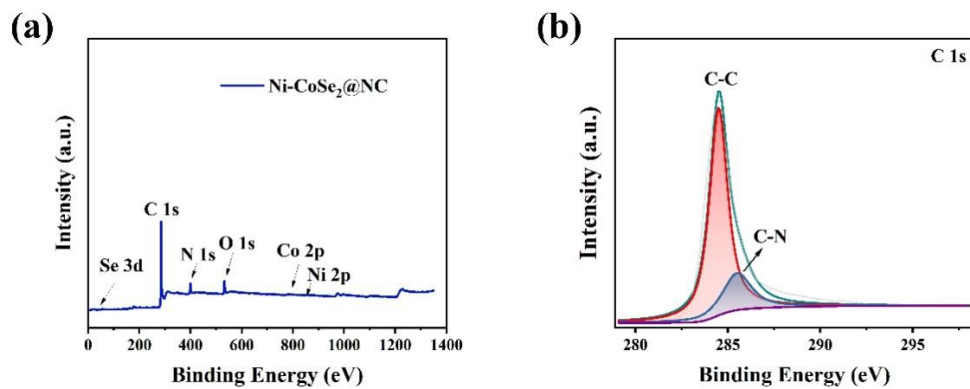


Fig. S4 XPS survey spectra of (a) Ni-CoSe₂@NC and (b) C 1s.

Fig. S5 Tafel plots fitted from CV curves. (a) The transition reactions from S₈ to Li₂S_n, (b) from Li₂S_n to Li₂S and (c) from Li₂S to Li₂S_n.

Fig. S6 (a) CV curves of symmetrical batteries assembled with a Li₂S₆ electrolyte and (b) potentiostatic discharge profiles for Li₂S nucleation tests.

Fig. S7 Post-cycling XPS spectra of Ni-CoSe₂@NC composite.

Fig. S8 The cycling performance when Ni-CoSe₂@NC modified side facing the lithium anode.