

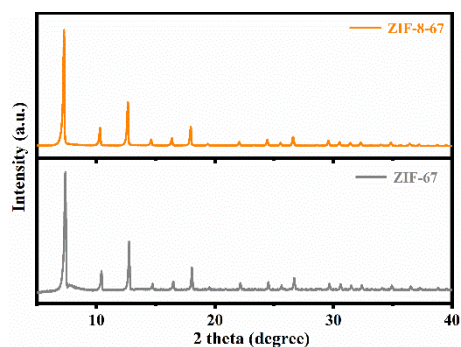


Fig. S1 XRD pattern of sacrifice precursor.

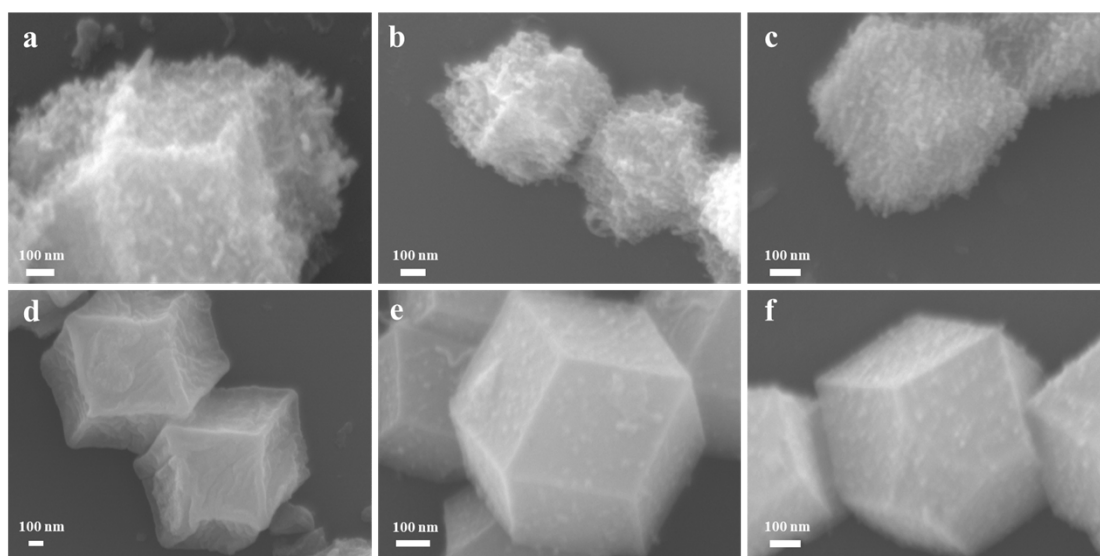


Fig. S2 FESEM of Co-CNT/NPC under different condition: under H₂/Ar atmosphere in molar ratio of Zn : Co 0:1 (a), 1:1 (b), 2:1 (c); under Ar atmosphere in molar ratio of Zn : Co 0:1 (d), 1:1 (e), 2:1 (f).

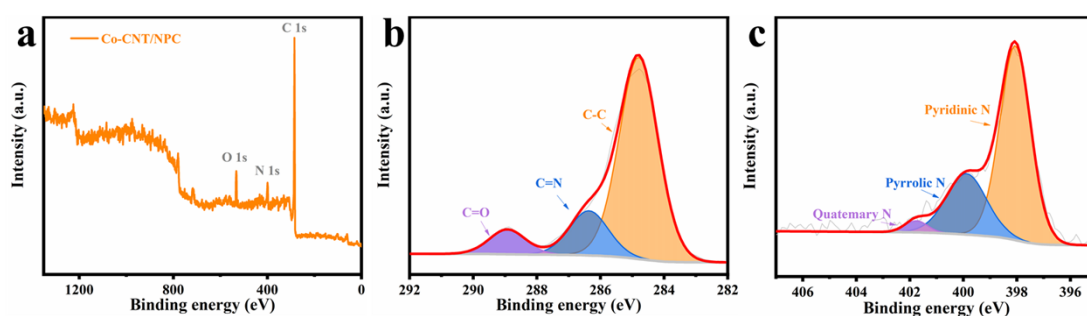


Fig. S3 XPS full sum spectrum (a) and detailed high-resolution spectrum of C 1s (b) and N 1s(c)

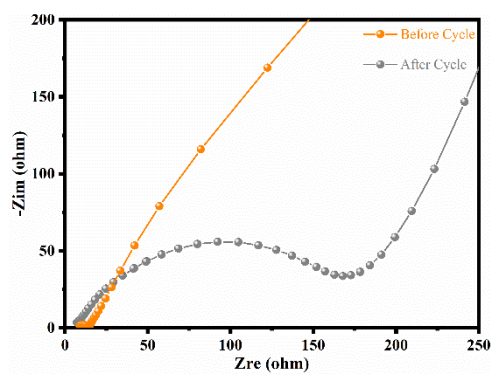


Fig. S4 Nyquist plots (c) before and after long cycle.

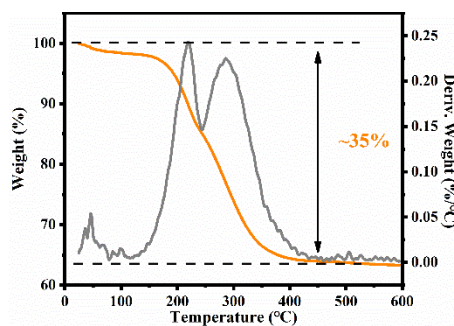


Fig. S5 Thermogravimetric analysis (TGA) patterns of Co-CNT/NPC

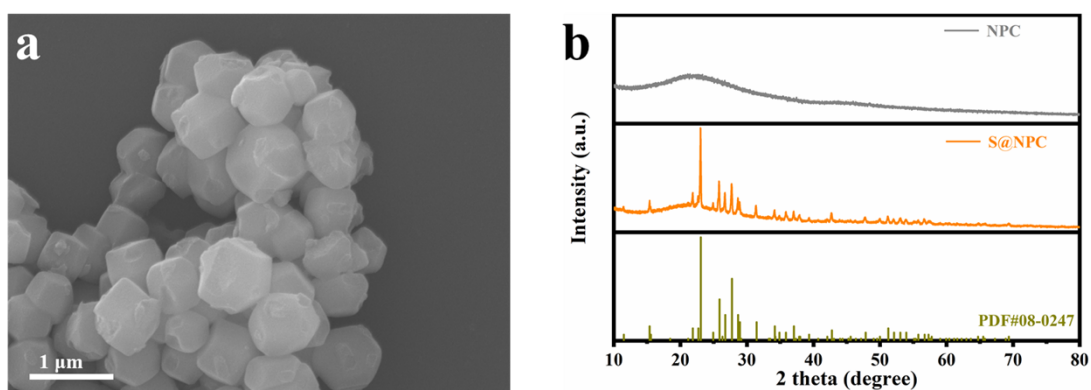


Fig. S6 FESEM(a) and XRD pattern (b) of cobalt-free contrast sample.

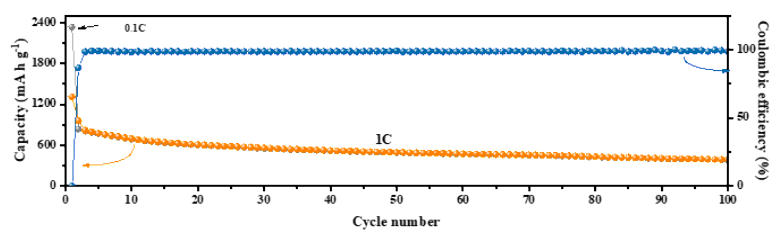


Fig. S7 Discharge-charge cycling performance of S@Co-CNT/NPC in NaPF₆ (DOL:DGM=1:1).

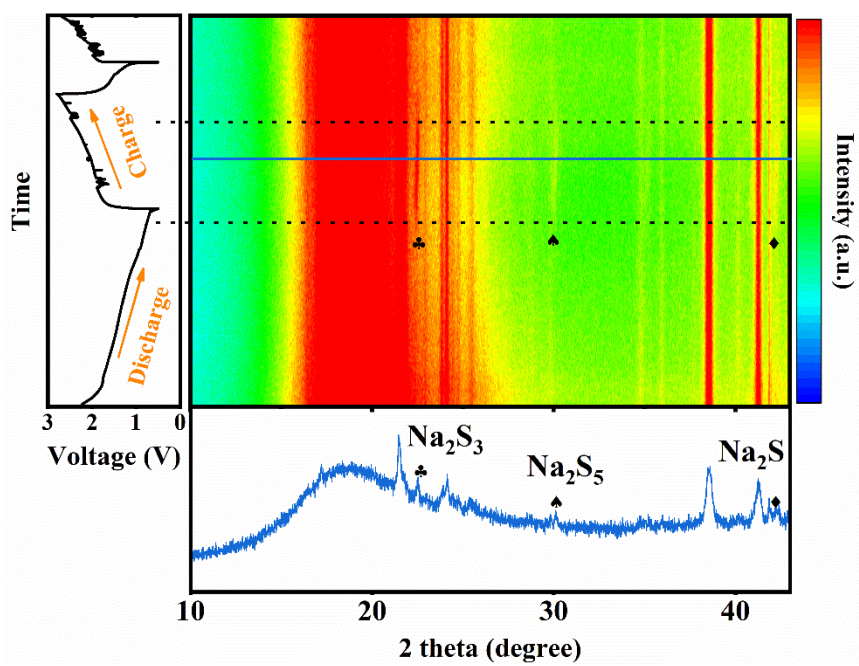


Fig. S8 In-situ XRD pattern of S@Co-CNT/NPC.

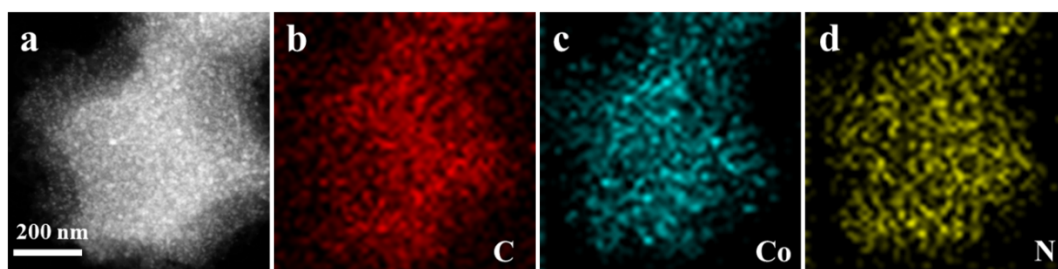


Fig. S9 Elemental mapping of C, Co, N in Co-CNT/NPC.

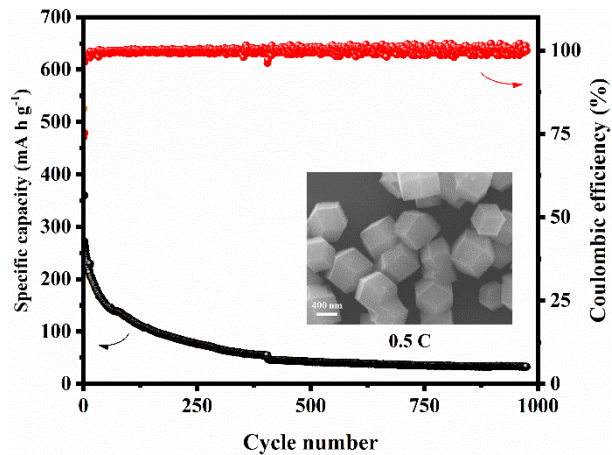


Fig. S10 Discharge-charge cycling performance of S@Co/NPC at 0.5 C.

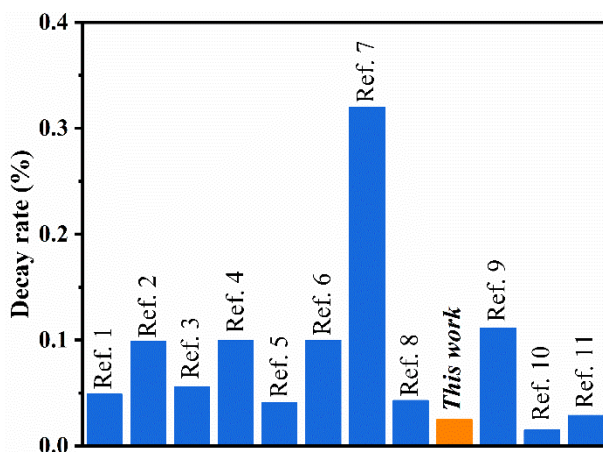


Fig. S11 Decay rate comparison of previously reported RT Li/Na-S batteries with this work.

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