

Supporting Information

Promoted Lithium Polysulfides Conversion and Immobilization by Conductive Titanium oxynitride-Carbon Architecture Design toward Advanced Lithium-sulfur Batteries

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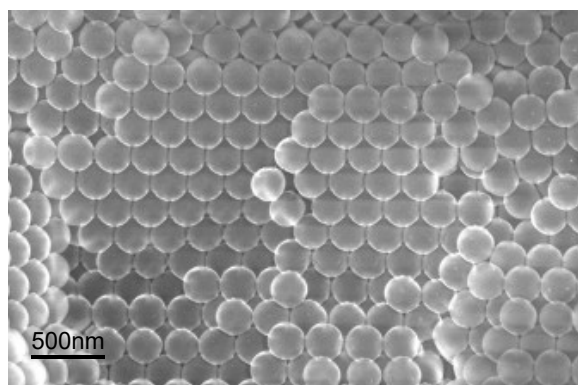


Fig. S1 SEM image of as-synthesized PS sphere.

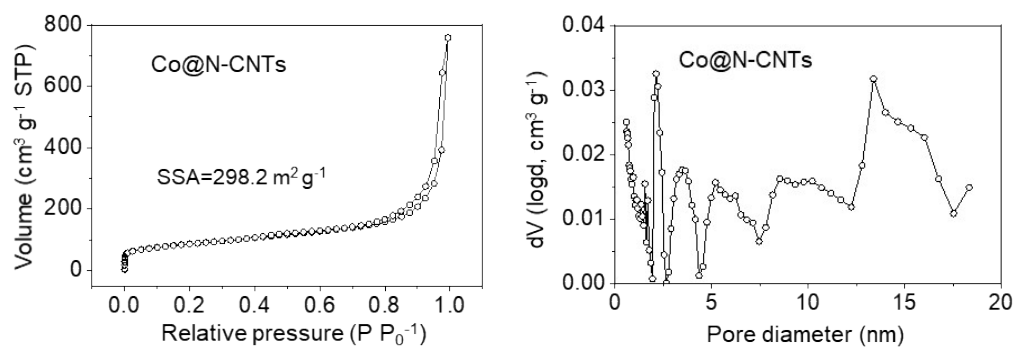


Fig. S2 N₂ adsorption-desorption isotherm and pore size distribution of Co@N-CNTs.

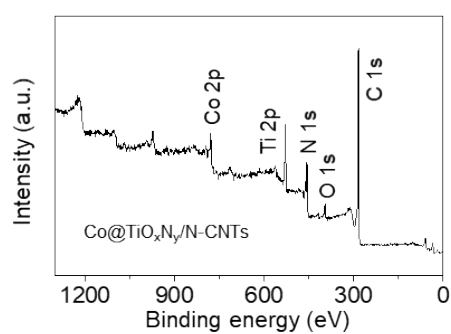


Fig. S3 XPS spectra of survey about the Co@TiO_xN_y/N-CNTs composite.

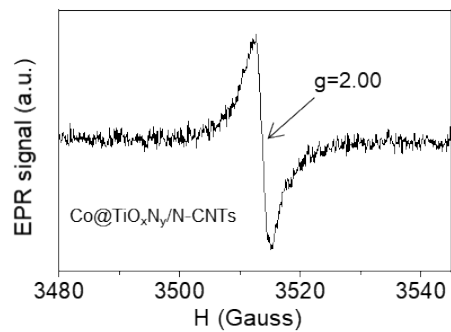


Fig. S4 EPR spectra.

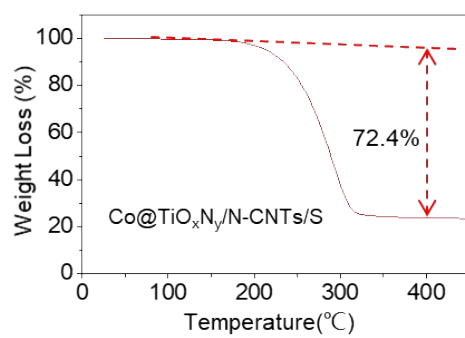


Fig. S5 TGA curves of pure materials of Co@TiO_xN_y/N-CNTs/S.

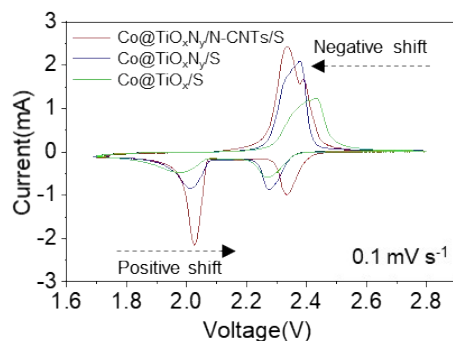


Fig. S6 Comparison CV curves of Co@TiO_x/S, Co@TiO_xN_y/S and Co@TiO_xN_y/N-CNTs/S electrodes during the first scan.

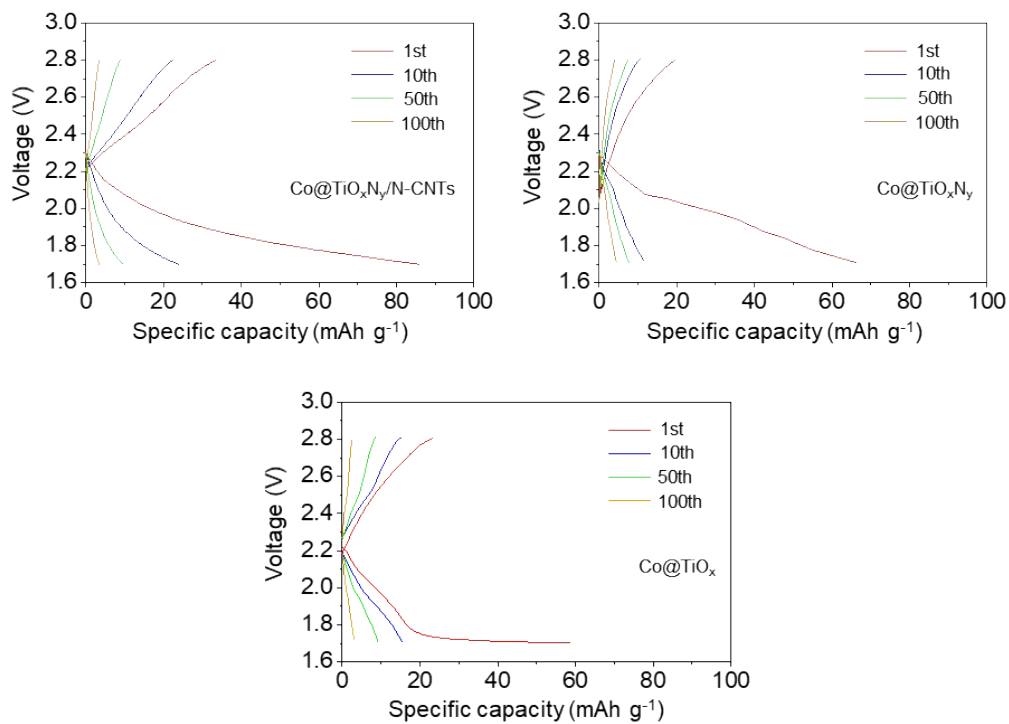


Fig. S7 The GCD profiles of three different cathodes without sulfur loading at 0.2 C.

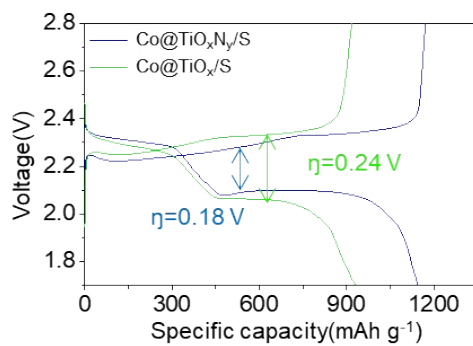


Fig. S8 The GCD profiles at 0.2 C.

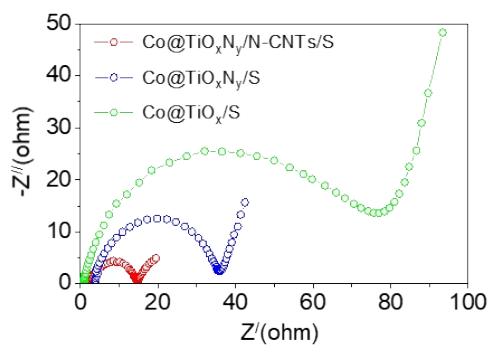


Fig. S9 EIS of Co@TiO_xN_y/N-CNTs/S, Co@TiO_xN_y/S and Co@TiO_x/S electrodes after 100 cycles at 0.2 C.

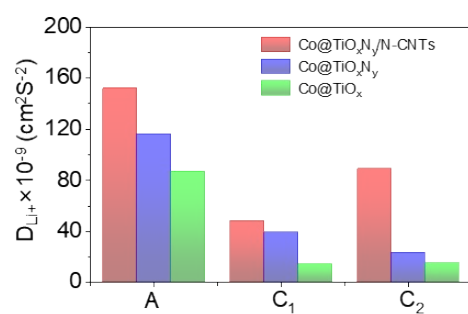


Fig. S10 Lithium ion diffusion coefficient (D_{Li}) values for the Co@TiO_xN_y/N-CNTs/S, Co@TiO_xN_y/S and Co@TiO_x/S electrodes.

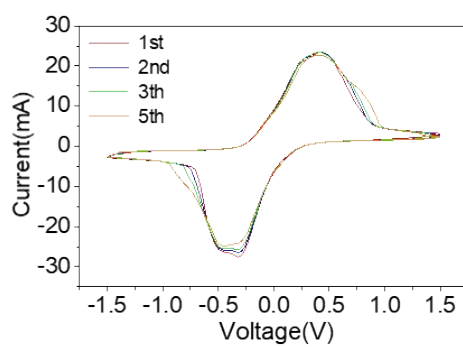


Fig. S11 Multicycle voltammograms of the Co@TiO_xN_y/N-CNTs symmetric cell at 5 mV s⁻¹.

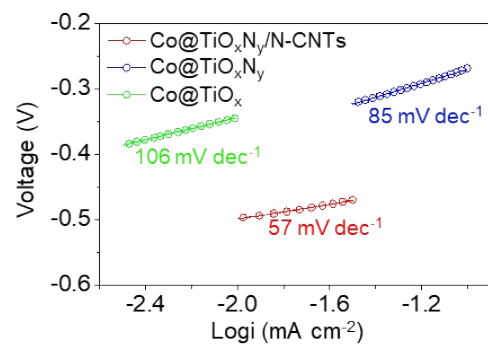


Fig. S12 Tafel slope of Co@TiO_xN_y/N-CNTs, Co@TiO_xN_y, and Co@TiO_x