Supporting Information for

Curtailing Carbon Usage with Addition of Functionalized $NiFe_2O_4$ Quantum Dots: Toward More Practical S Cathodes for Li-S Cells

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Supplementary Figures

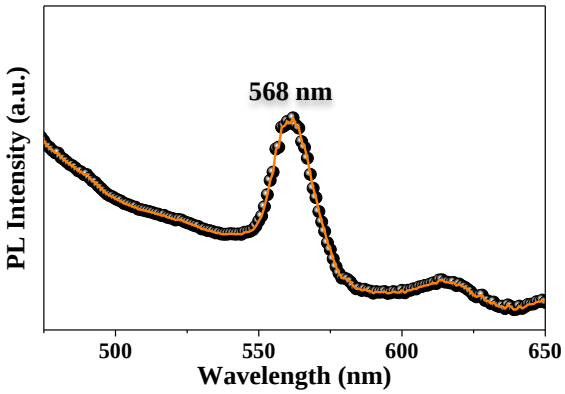

Fig. S1 Fluorescence spectrum of $NiFe_2O_4$ QDs

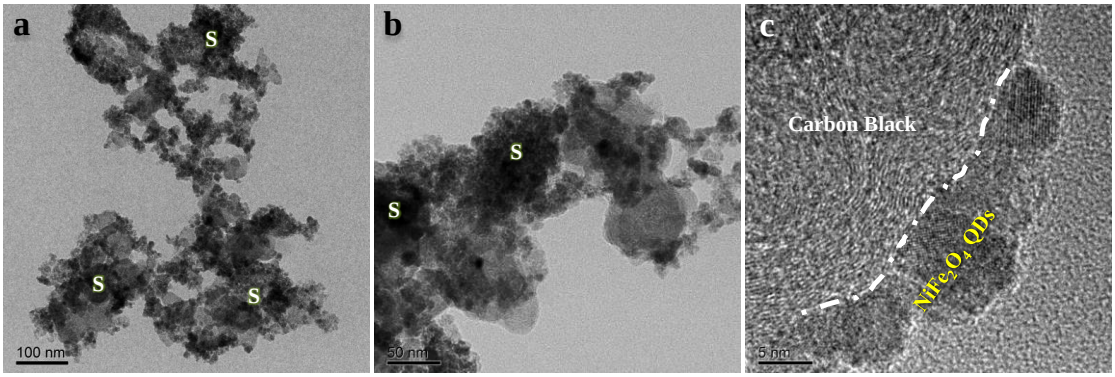

Fig. S2 Typical TEM images of S@CB⊆QDs

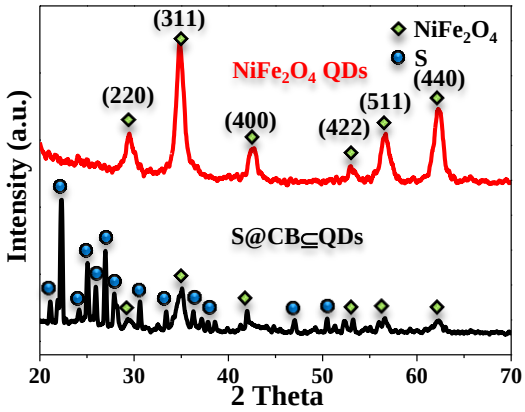

Fig. S3 XRD patterns of $NiFe_2O_4$ QDs and S@CB⊆QDs hybrids

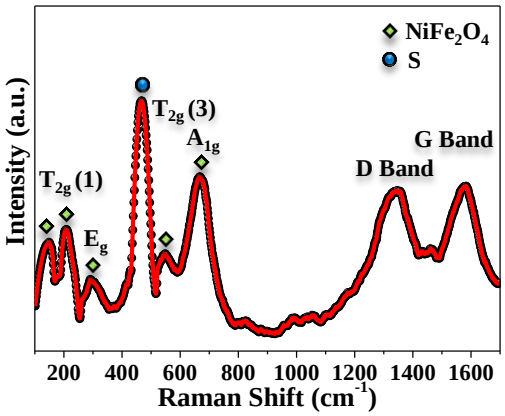

Fig. S4 *Raman* spectrum of S@CB⊆QDs

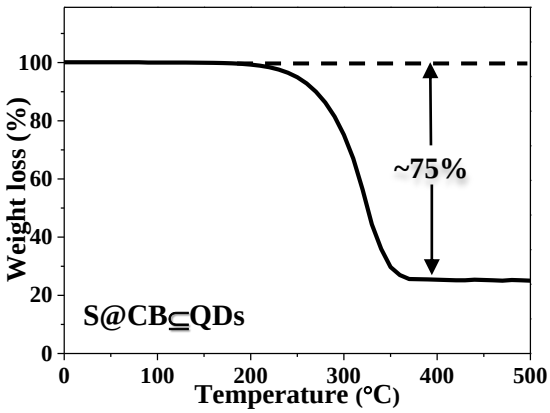

Fig. S5 TG curve of S@CB⊆QDs

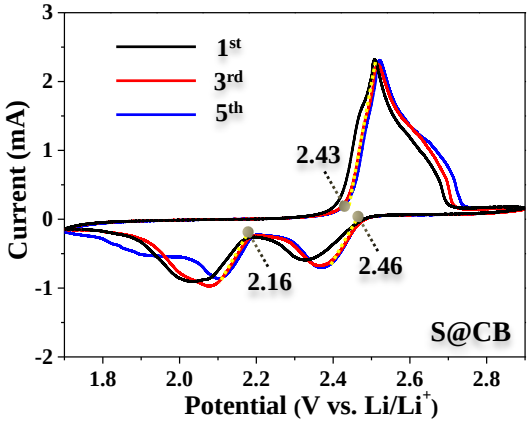

Fig. S6 CV curves of S@CB hybrid cathode

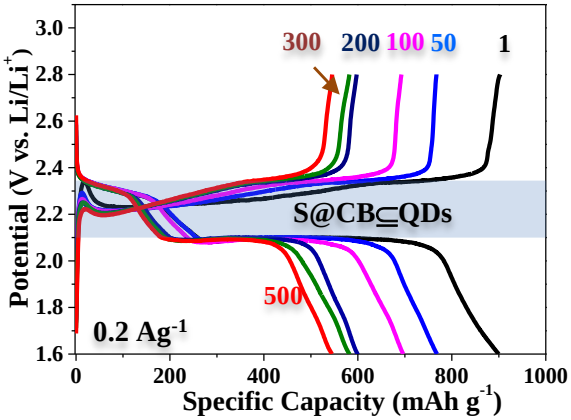

Fig. S7 Galavanostatic charge/discharge profiles of S@CB⊆QDs cathode

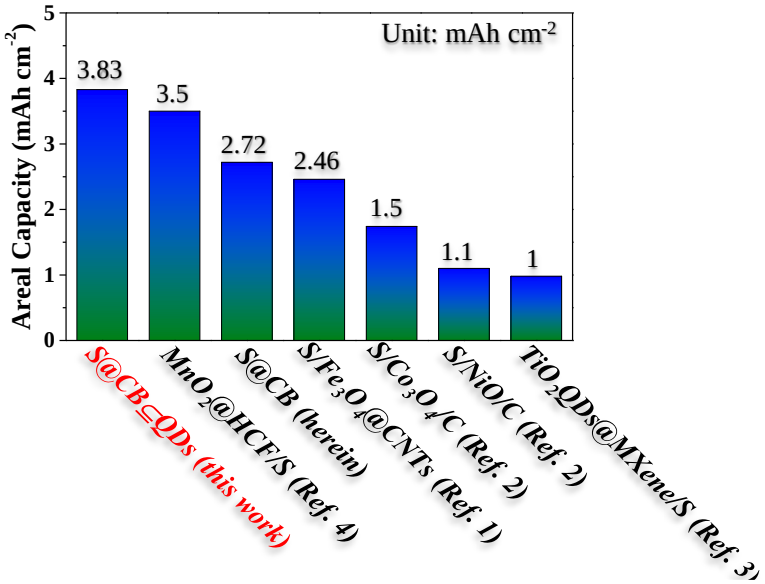

Fig. S8 Areal capacity comparison of S@CB⊆QDs, S@CB and other metal oxide-based cathodes

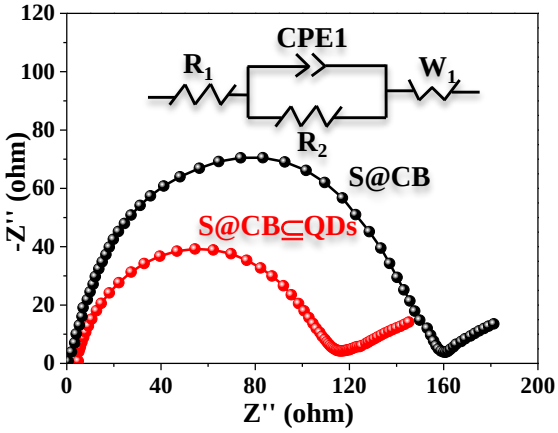

Fig. S9 The EIS plot comparison between the S@CB and S@CB⊆QDs cathodes

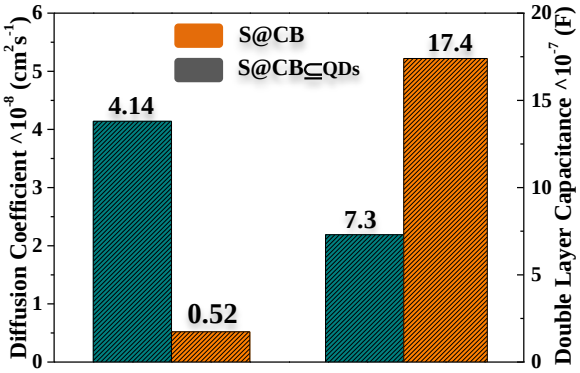

Fig. S10 Comparisons on Li^+ diffusion coefficients and double layer capacitances between the S@CB and S@CB⊆QDs cathodes

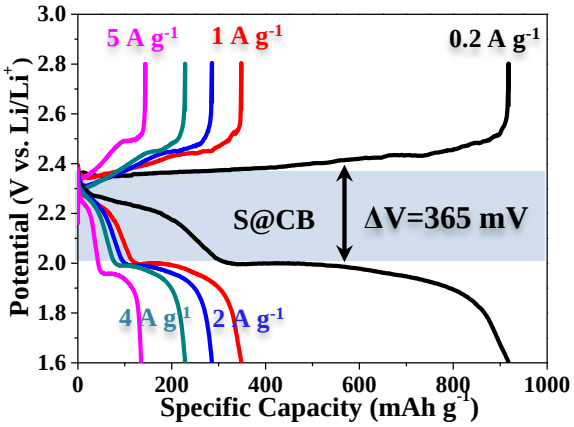

Fig. S11 Charge/discharge voltage profiles of S@CB cathodes at different current densities

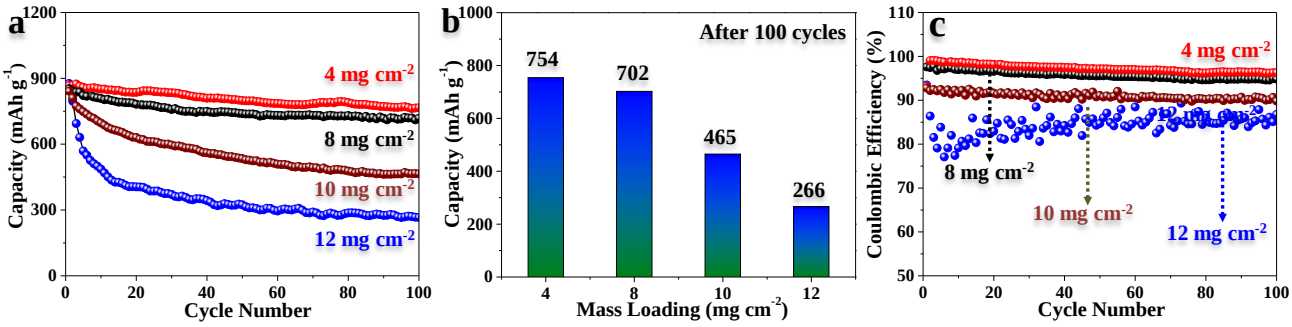

Fig. S12 a Cyclic testing of S@CB⊆QDs cathodes under different mass loadings, **b** specific capacity *vs.* areal loading plot and **c** their corresponding Coulombic efficiency

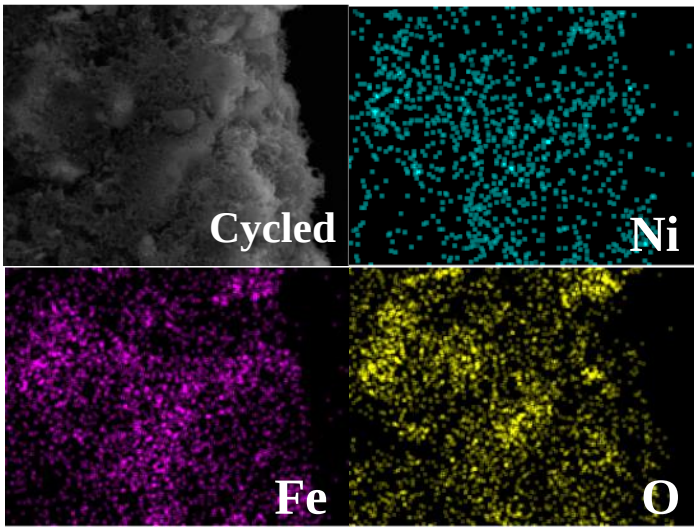

Fig. S13 EDS elemental mappings of cycled S@CB⊆QDs cathode

Supplementary References

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