Supplementary Information (SI) for RSC Advances.

Supporting Information

Title: CNTs Encapsulated Nickel-doped Hollow Porous Manganese Oxide Scaffold as Sulfur Cathode Host for Li-S Battery Applications

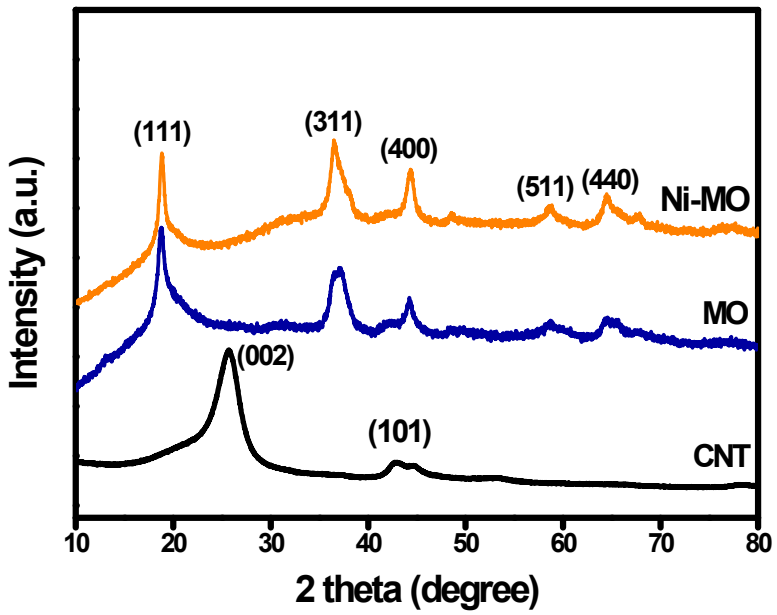

Fig. S1. XRD pattern of CNT, MO and Ni-MO materials

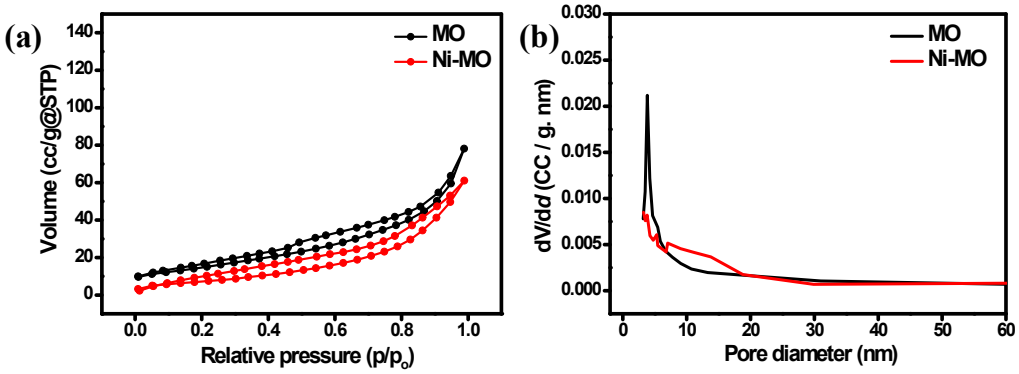

Fig. S2. (a) Nitrogen adsorption-desorption isotherms (b) pore size distributions curves of MO, Ni-MO materials.

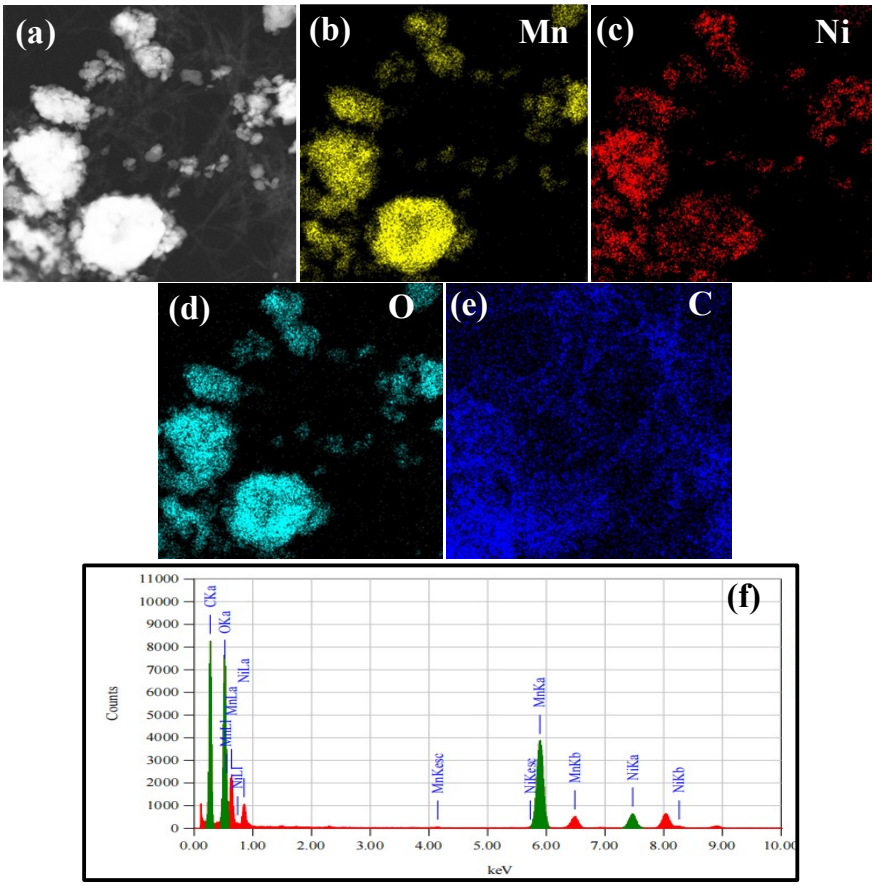

Fig. S3. (a) STEM image and STEM-EDX elemental mapping of (b) Mn (c) Ni, (d) O, and (e) C (f) EDX-spectrum of Ni-MO/CNT material.

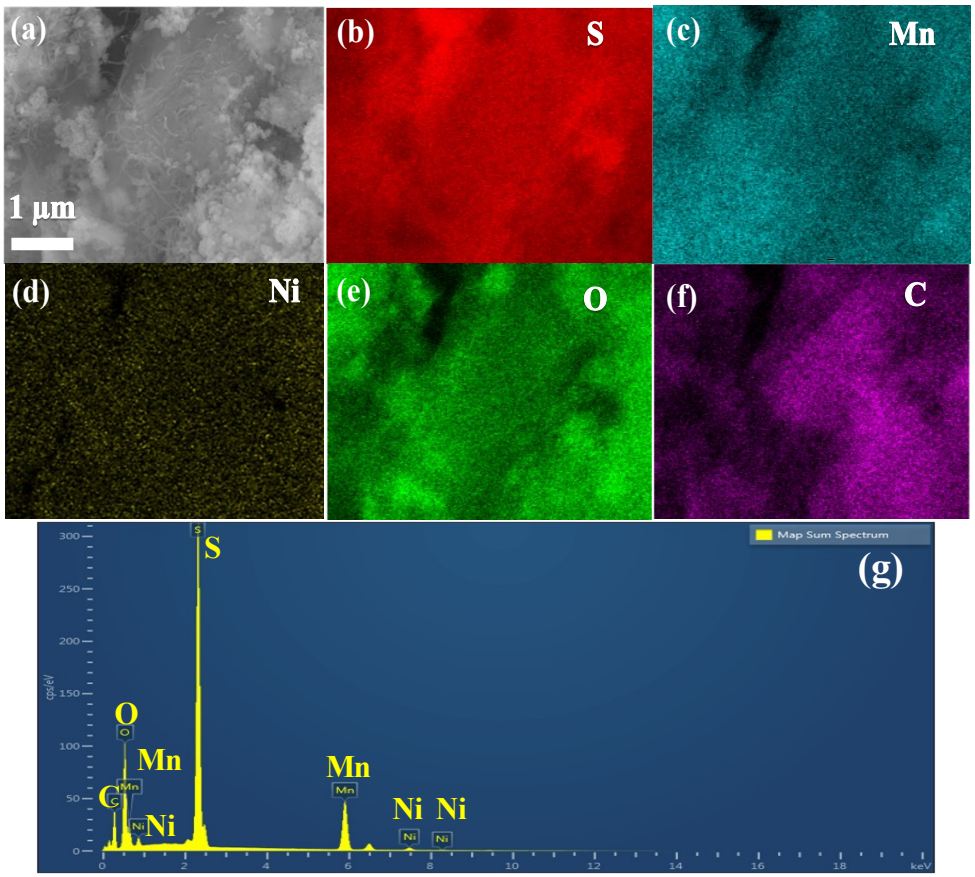

Fig. S4. (a) SEM image and SEM-EDX elemental mapping of (b) S (c) Mn (d) Ni, (e) O, and (f) C (g) SEM-EDX-spectrum of S@Ni-MO/CNT cathode material.

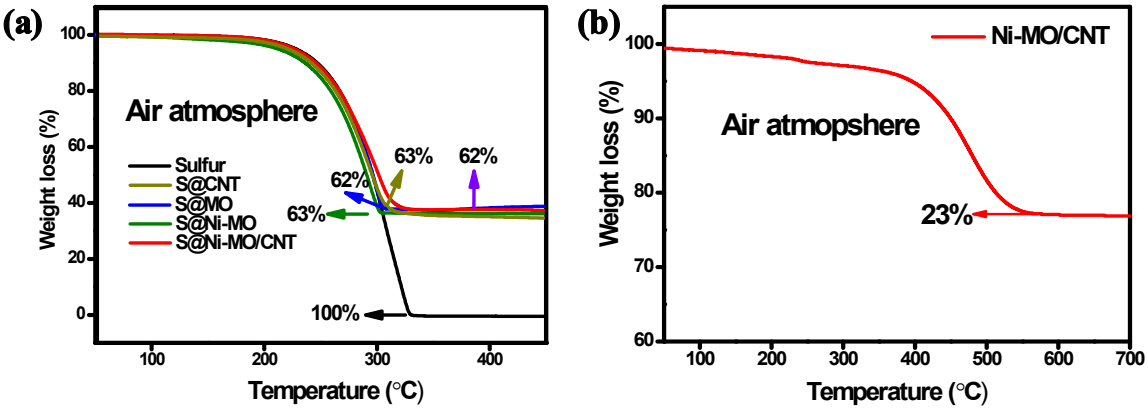

Fig. S5. (a) TGA results of pure sulfur, S@CNT, S@MO, S@Ni-MO, and S@Ni-MO/CNT in argon atmosphere (b) TGA results of Ni-MO/CNT in air atmosphere.

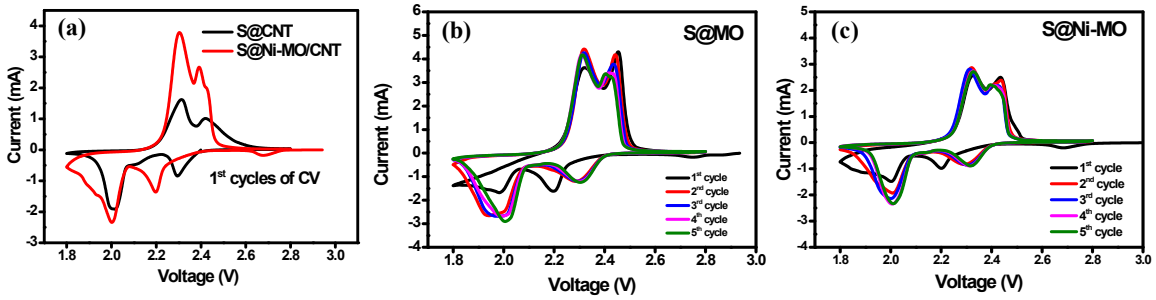

Fig. S6. Cyclic voltammograms (a) First cycles of S@CNT and S@Ni-MO/CNT cathodes (b) First five cycles of S@MO cathode (c) First five cycles of S@Ni-MO cathode.

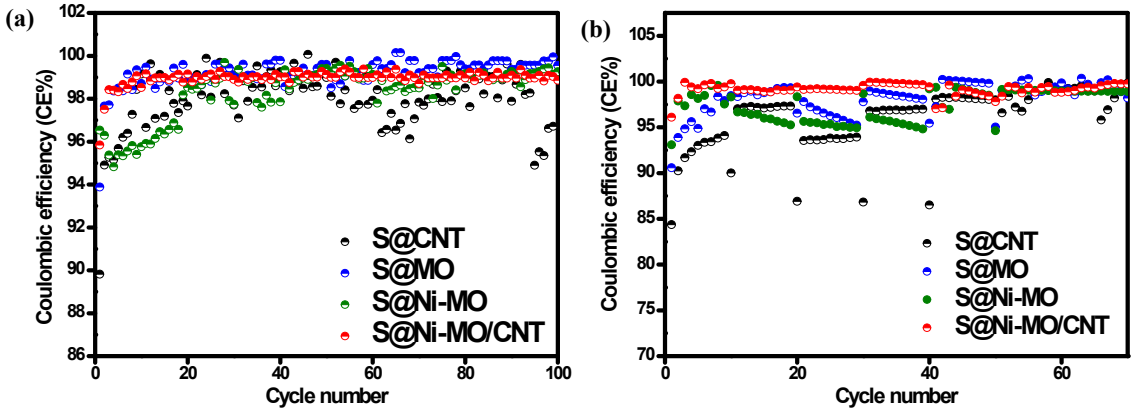

Fig. S7. Cycle number vs. coulombic efficiency plots for S@CNT, S@MO, S@Ni-MO, and S@Ni-MO/CNT (a) cyclability (b) rate capability.

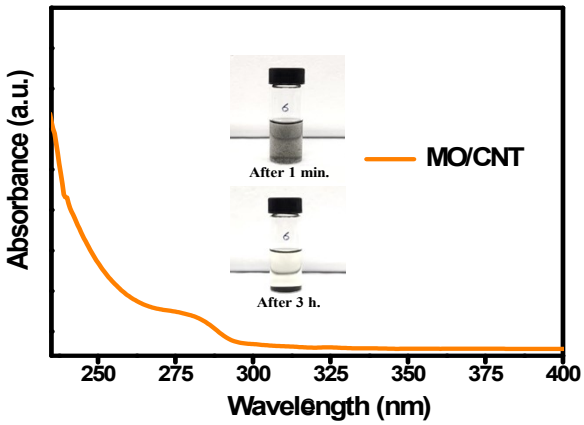

Fig. S8. Li_2S_6 polysulfide adsorption test: (a) digital photograph of polysulfide adsorption tests for MO/CNT material in Li_2S_6 solutions in the time intervals of 1 min. and after 3 h and UV-vis absorption spectra of lithium polysulfide solution MO/CNT supernatant liquid after resting for 3h.

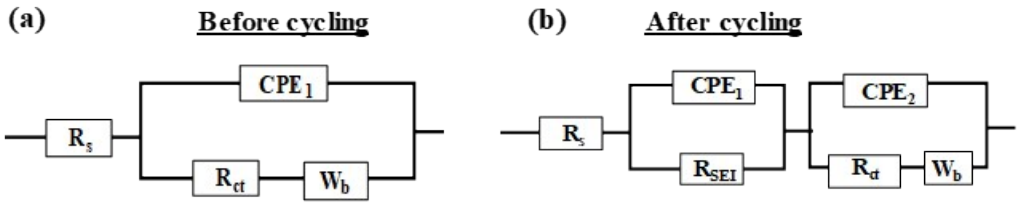

Fig. S9. Equivalent circuit models for EIS (a) before cycling (b) after 100 cycles.