Supporting information

Sandwich-Like Reduced Graphene Oxide Wrapped MOF-Derived $ZnCo_2O_4$-ZnO-C on Nickel Foam as Anodes for High Performance Lithium Ion Batteries

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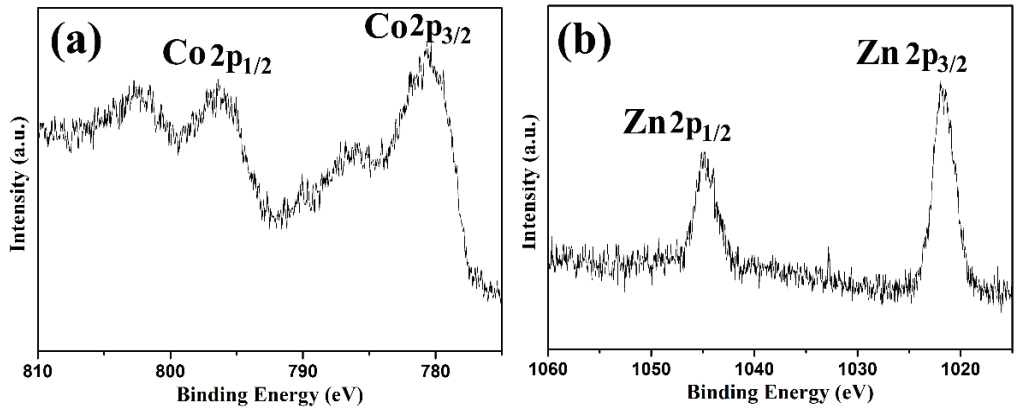

Figure S1. High resolution XPS spectrum of the (a) Co and (b) Zn.

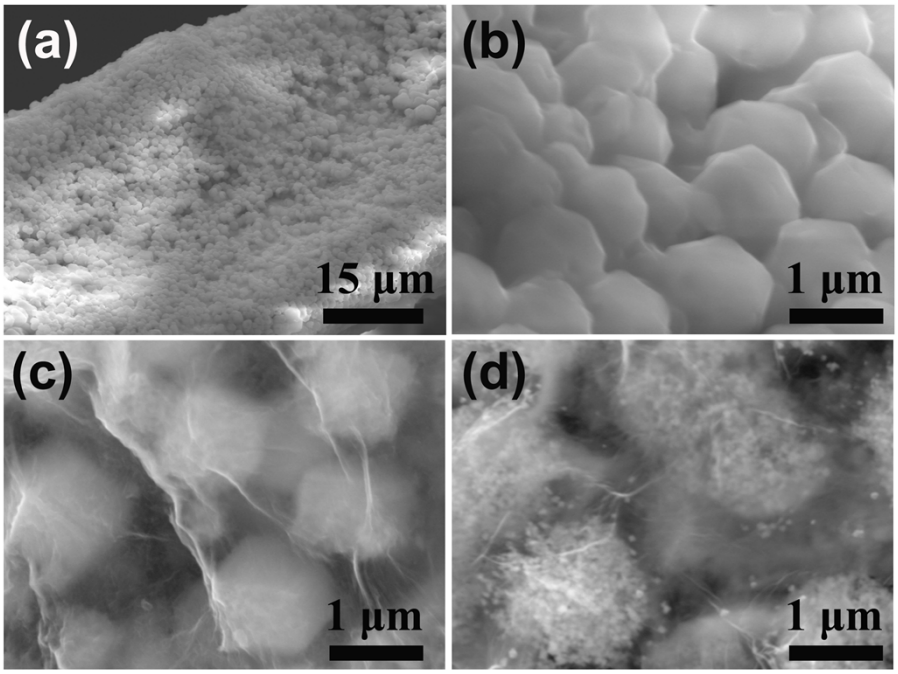

Figure S2. SEM images of the (a)(b) ZIF-67/Ni (c) GO/ZIF-67/Ni and (d) RGO/CoO-C/Ni.

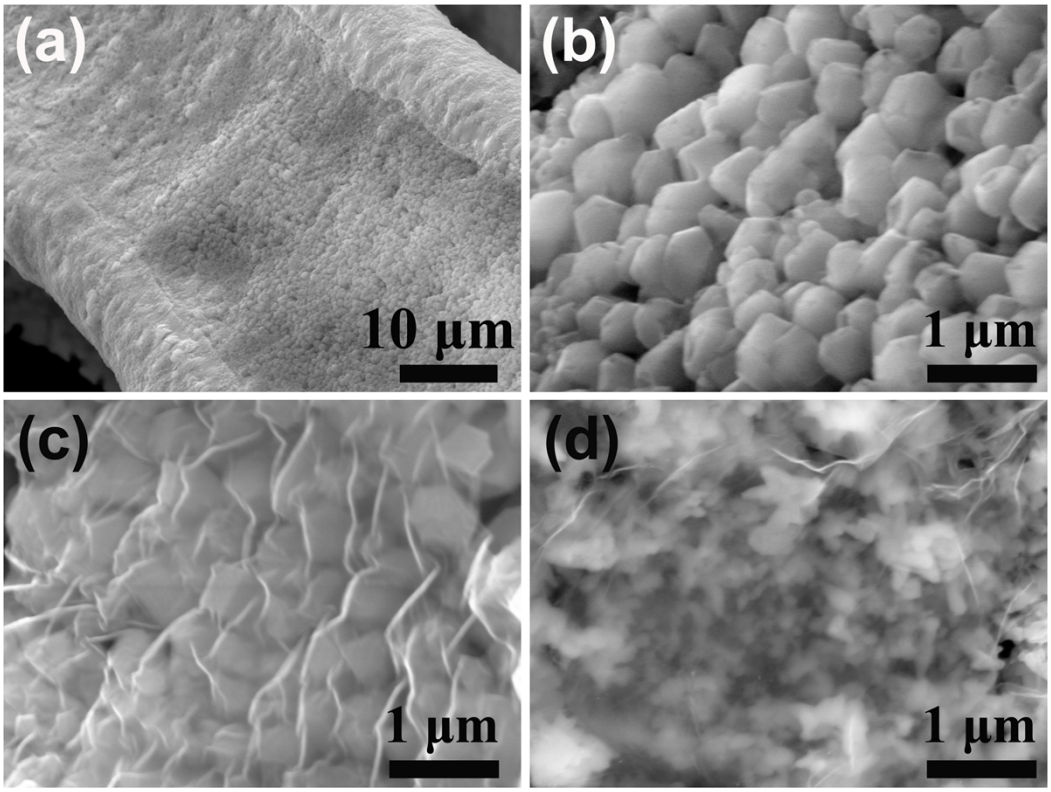

Figure S3. SEM images of (a-b) ZIF-8/Ni, (c) GO/ZIF-8/Ni and (d) RGO/ZnO-C/Ni.

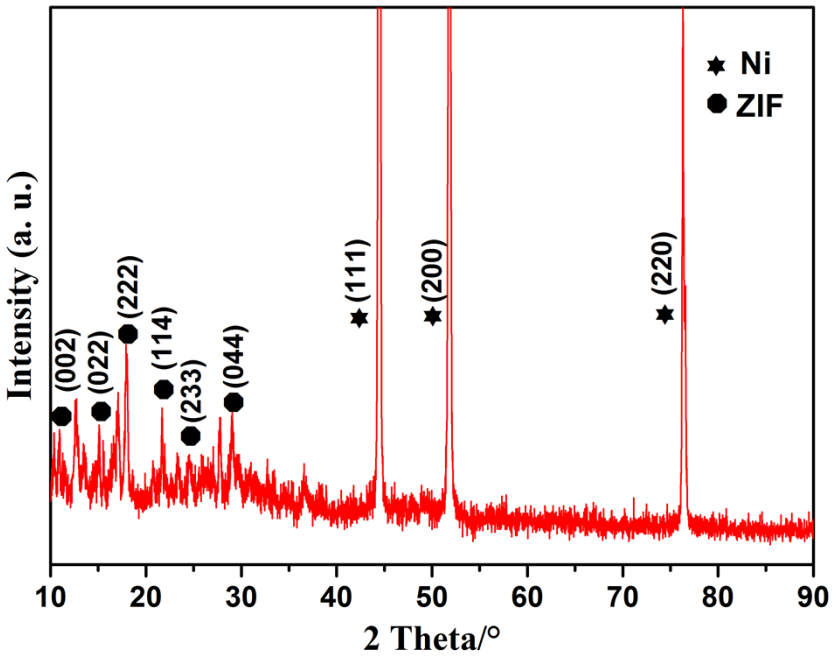

Figure S4. XRD pattern of the Zn-Co-ZIF-0.68/Ni

The XRD pattern of the Zn-Co-ZIF-0.68/Ni is shown in Figure S3. The three strong diffraction peaks located at 44.5°, 51.8° and 76.4° correspond to the (111), (200) and (220) planes of Ni (PDF 70-1849), respectively. The other peaks at positions lower than 50 degrees match well with the XRD pattern of previous reported ZIF crystals, confirming the formation of ZIF crystals on the surface of nickel foam.

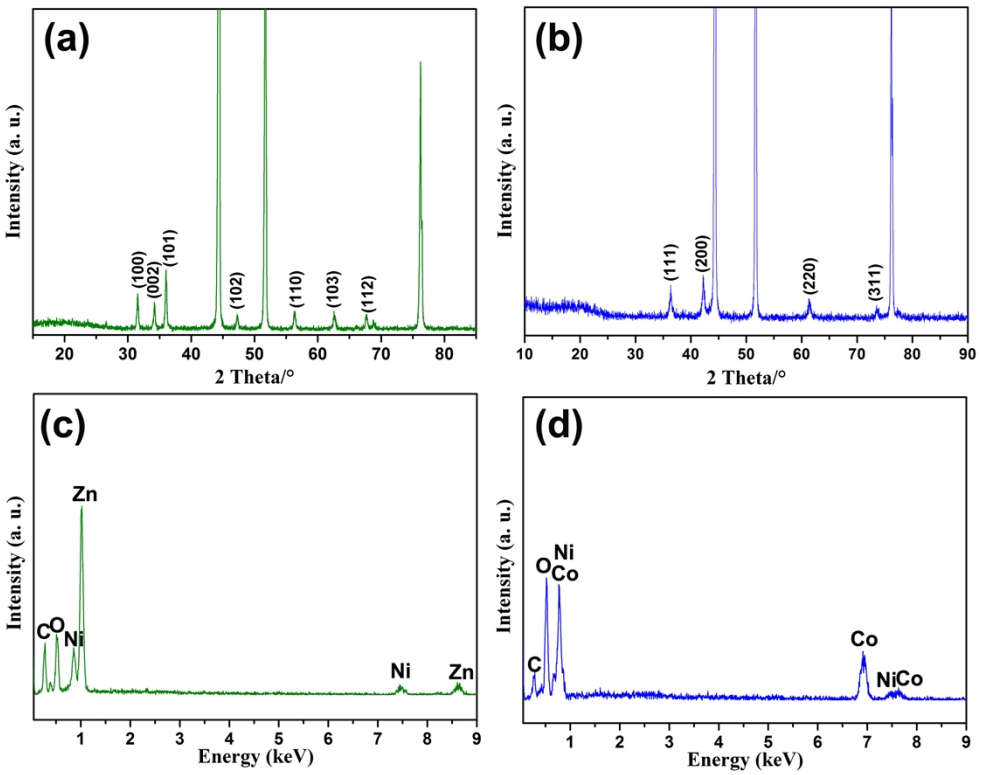

Figure S5. XRD patterns of (a) RGO/ZnO-C/Ni, (b) RGO/CoO-C/Ni. EDS results of (c) ZnO-C/Ni and (d) CoO-C/Ni.

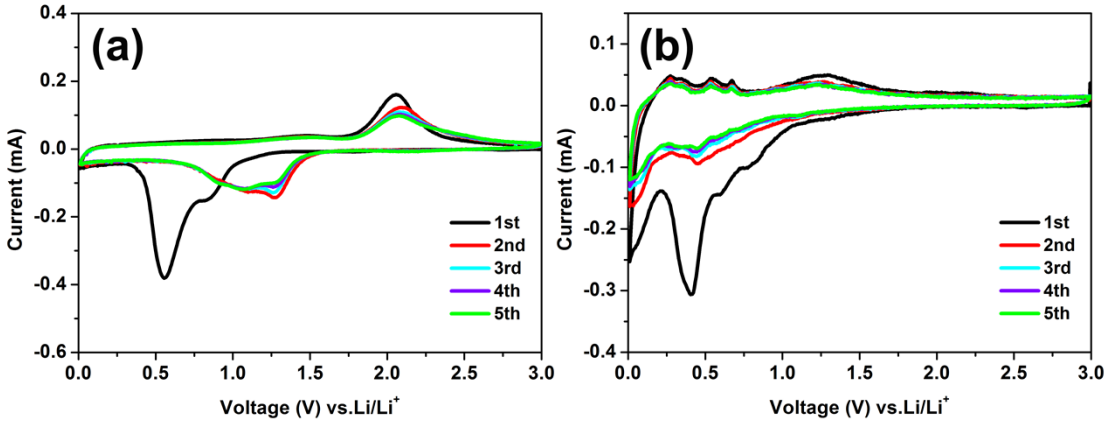

Figure S6. CV curves of (a) RGO/CoO-C/Ni, (b) RGO/ZnO-C/Ni anode for five cycles at a scan rate of 0.1 mV s^{-1} in the voltage range of 3.0-0.01 V

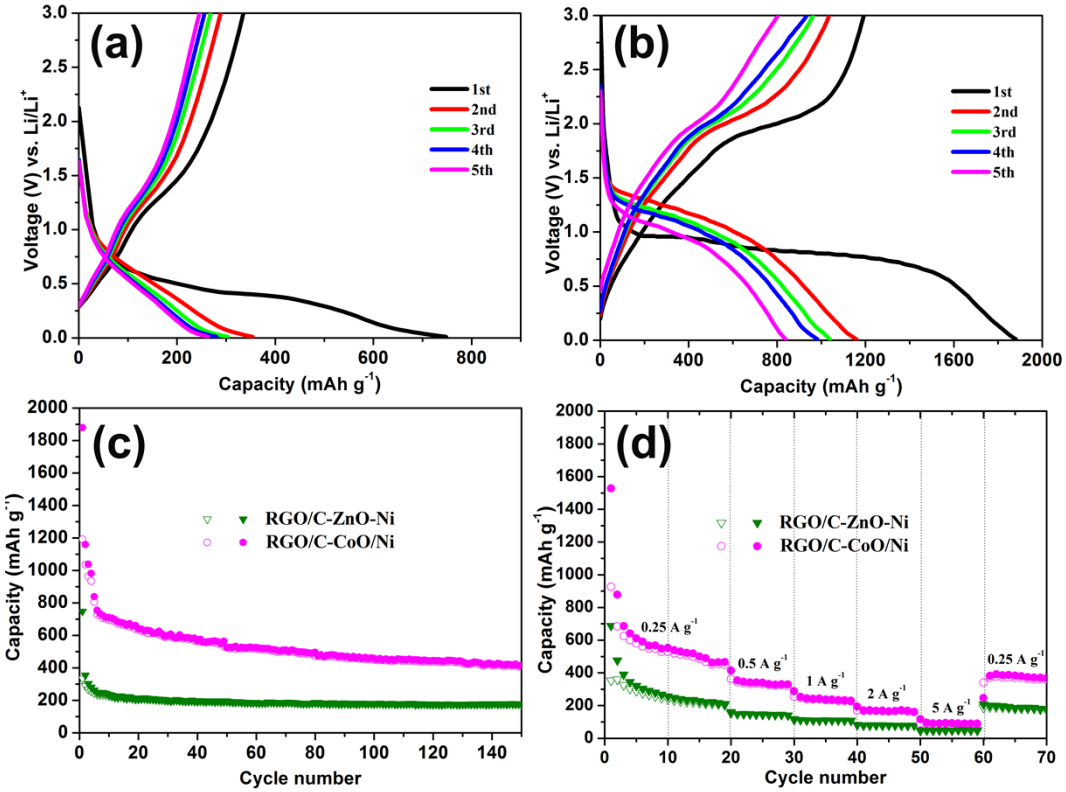

Figure S7. Discharge−charge profiles of (a) RGO/C-ZnO/Ni, (b) RGO/C-CoO/Ni, (c) Cycling performance and (d) Rate capabilities of RGO/C-ZnO/Ni and RGO/C-CoO/Ni anodes.

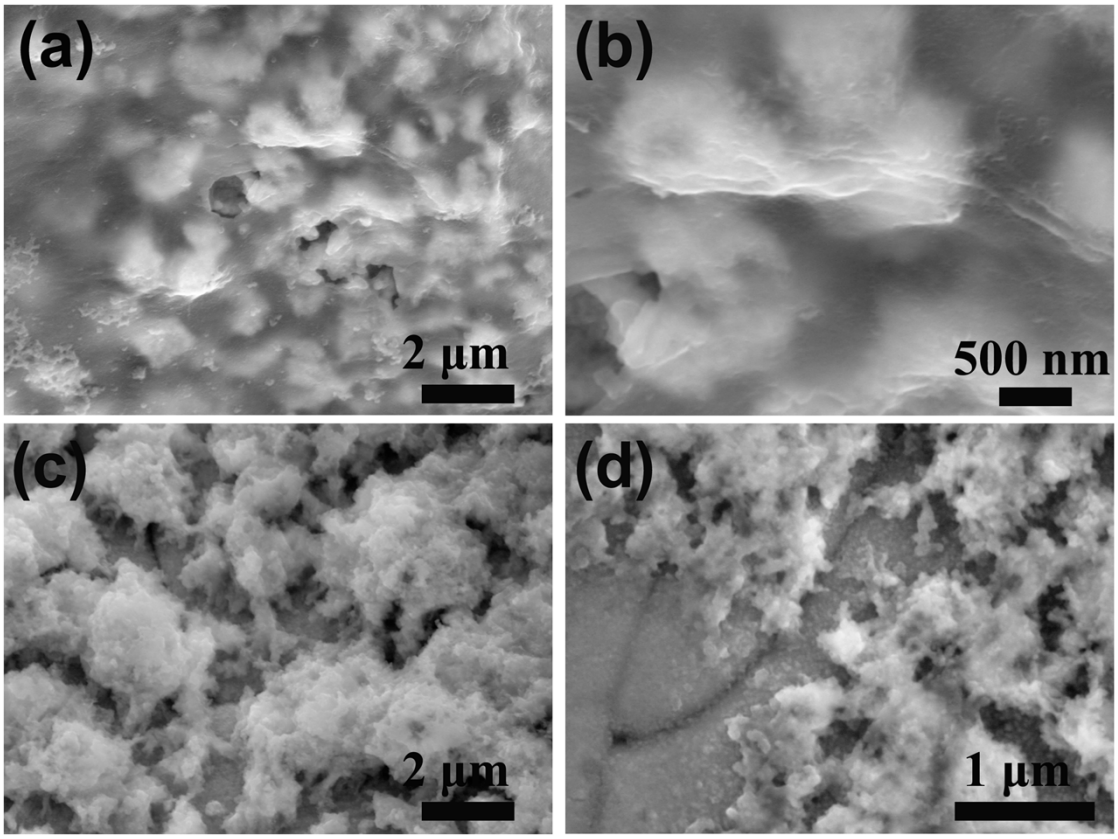

Figure S8. SEM images of the electrodes after 150 cycles. (a-b) RGO/$ZnCo_2O_4$-ZnO-C/Ni, (c-d) $ZnCo_2O_4$-ZnO-C/Ni.