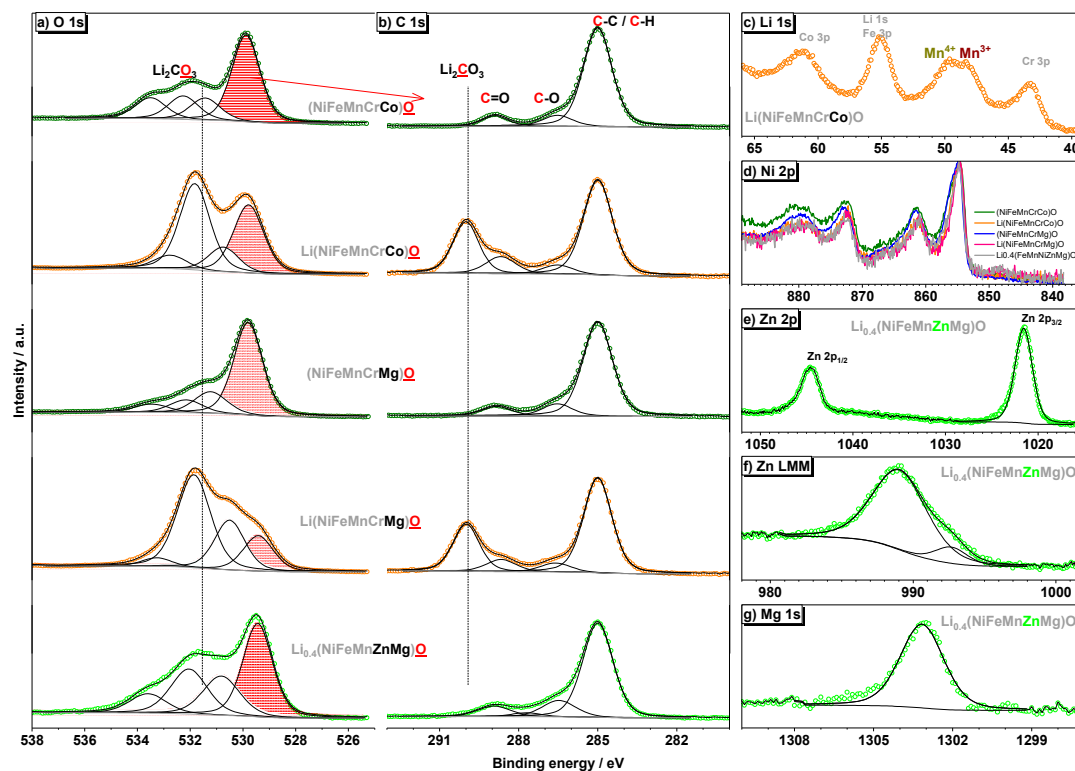
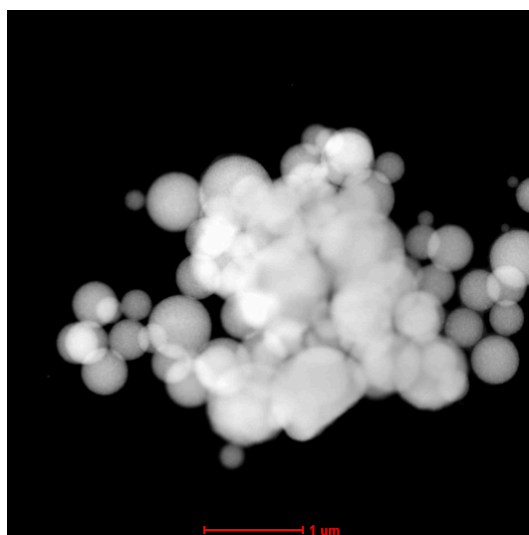


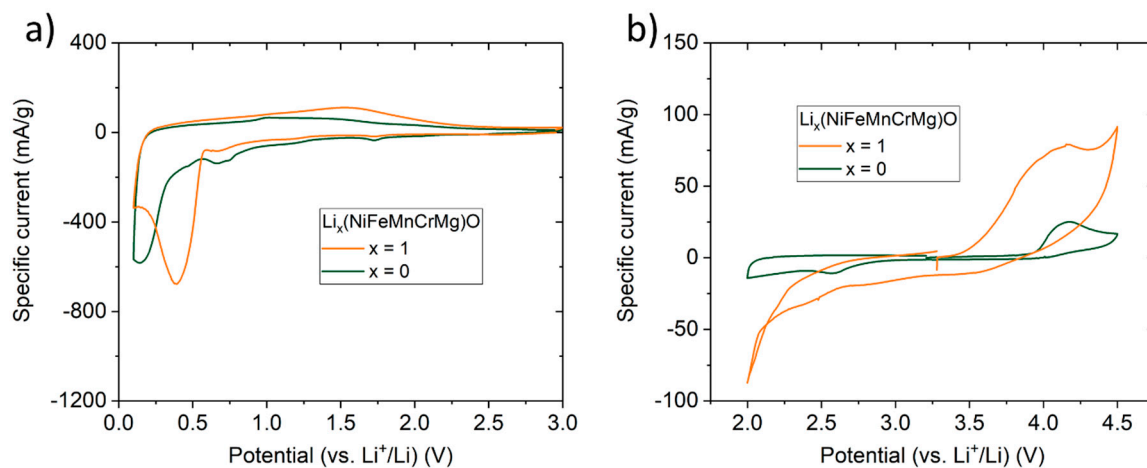
Supplementary Information



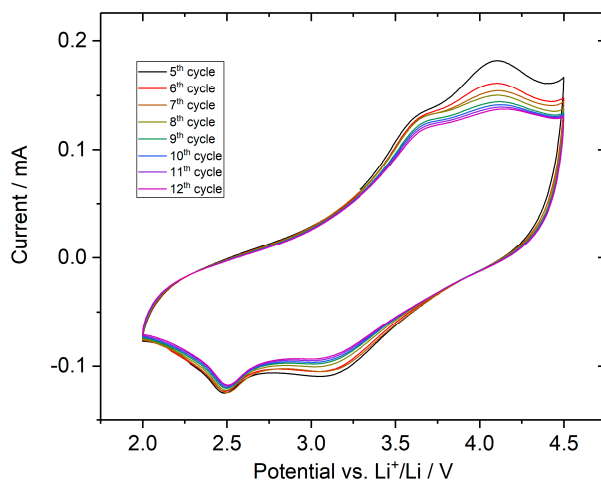
**Figure S1.** XPS spectra of the O 1s, C 1s, Li 1s, Ni 2p, Zn 2p, Zn LMM, and Mg 1s core level regions for HEO-1 (with  $x = 0$  and 1), HEO-2 (with  $x = 0$  and 1), and HEO-3 (with  $x = 0.4$ ).



**Figure S2.** HAADF STEM micrograph of HEO-1.



**Figure F3.** Cyclic voltammograms of HEO-2 (with  $x = 0$  and 1) in the voltage range of a) 0.1–3.0 V and b) 2.0–4.5 V versus  $\text{Li}^+/\text{Li}$ . Note that only the initial cycle is shown.



**Figure S4.** Cyclic voltammograms at 1 mV/s for the 5th to 12th cycles of HEO-1 (with  $x = 1$ ) in the voltage range of 2.0–4.5 V versus  $\text{Li}^+/\text{Li}$ .