Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

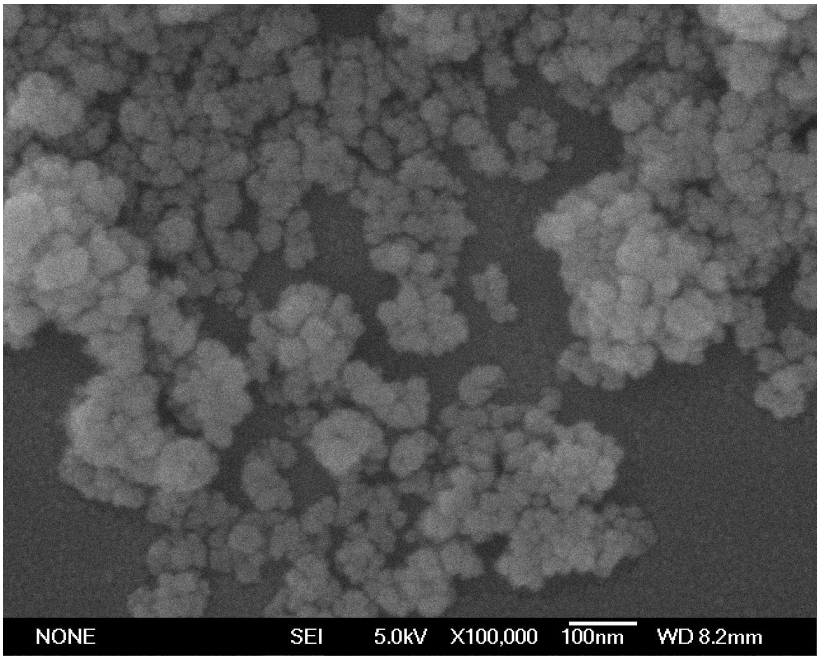

Fig.S1 SEM image of pure Fe_3O_4 nanoparticles prepared by coprecipitation method

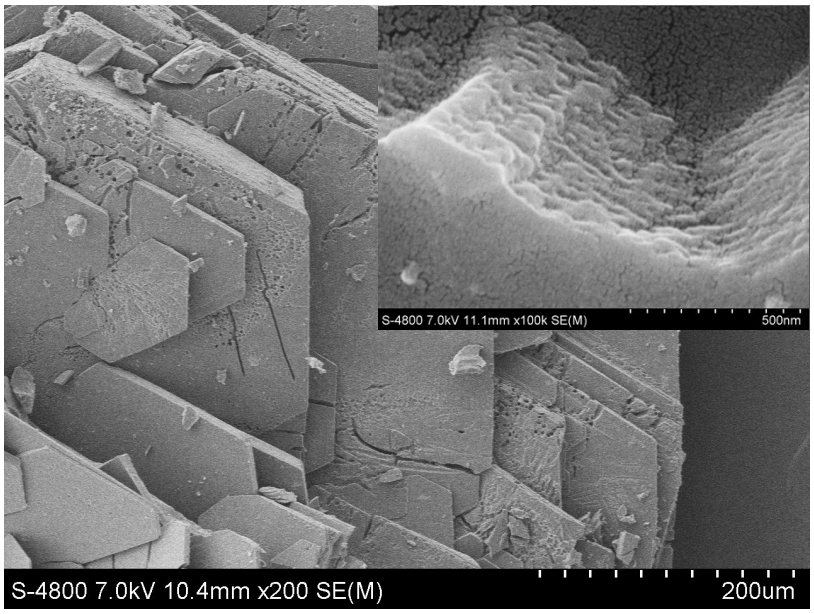

Fig.S2 SEM images of the precursors $[NH_3(CH_2)_6NH_3][Fe_{1.5}F_3(SO_4)]\cdot 0.5H_2O$, showing their layered structures.

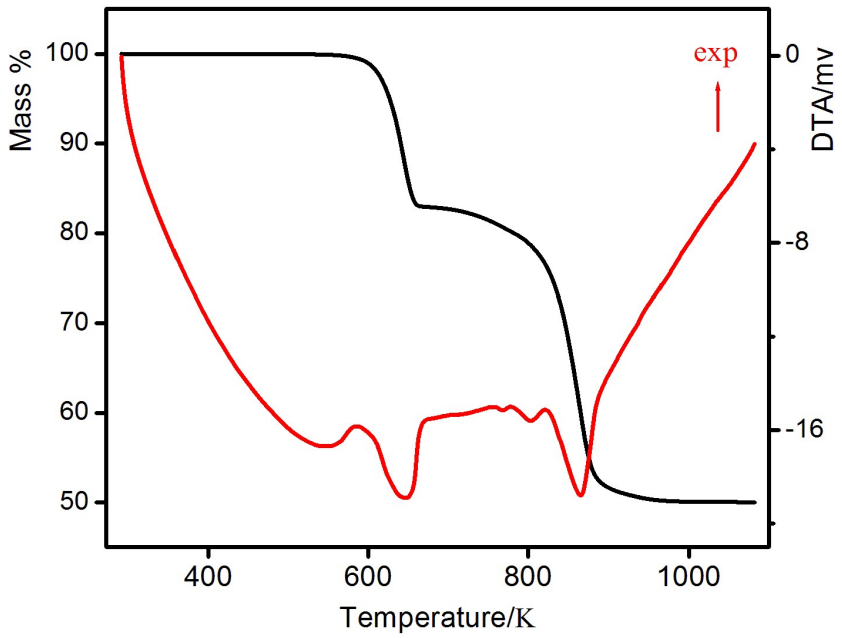

Fig. S3 TG and DTA curves of the precursor $[NH_3(CH_2)_6NH_3][Fe_{1.5}F_3(SO_4)]\cdot 0.5H_2O$ in Ar gas. There are two distinct weight losses consistent with the molecular formula. A sharp weight loss in the region 573-660 K corresponding to the loss of the water molecules, amine and HF [$0.5H_2O+2NH_3+HF$, exp = 17.6 %, cal = 17.3%]. The second major weight loss in the region 660-973 K corresponds to the removal of remaining fluorine, hydrogen and the decomposition of SO_4^{2-} moiety, [$5.5H_2 + F_2 + SO_2$, exp = 31.8 %, cal = 31.0 %].

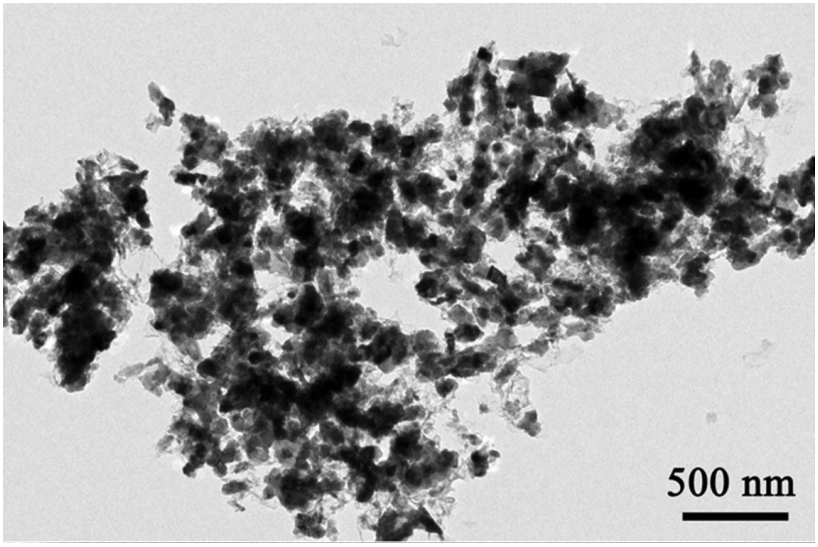

Fig. S4 Low-magnification TEM image of Fe_3O_4-NPs@C sample.

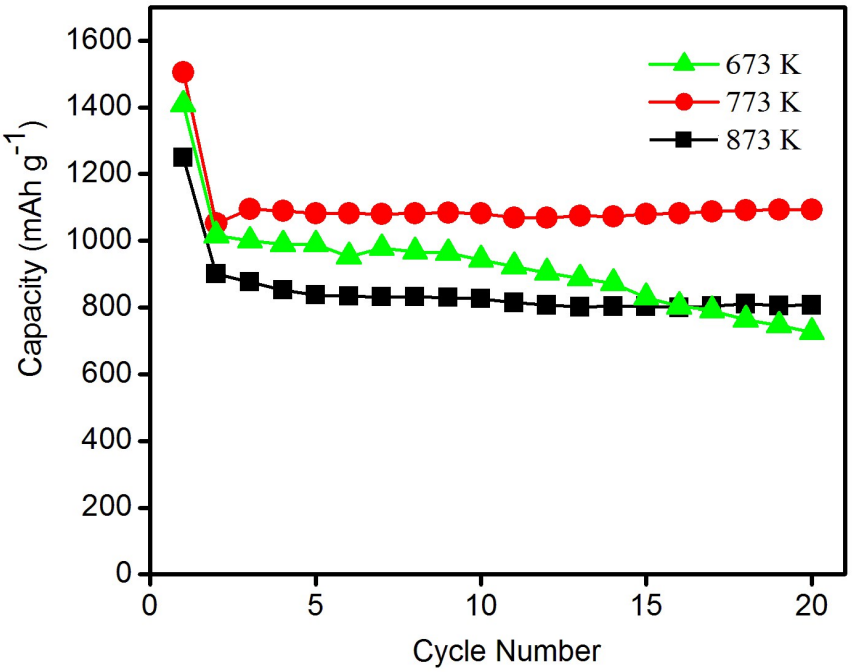

Fig.S5 Charge/discharge capacities of the Fe_3O_4-NPs@C samples calcinated under various temperatures.

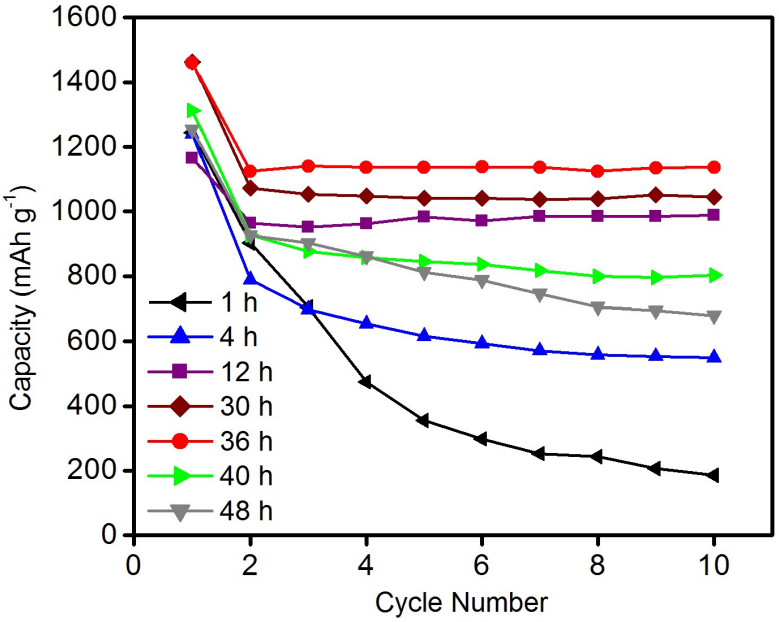

Fig.S6 Charge/discharge capacities of the Fe_3O_4-NPs@C samples calcinated for various time.

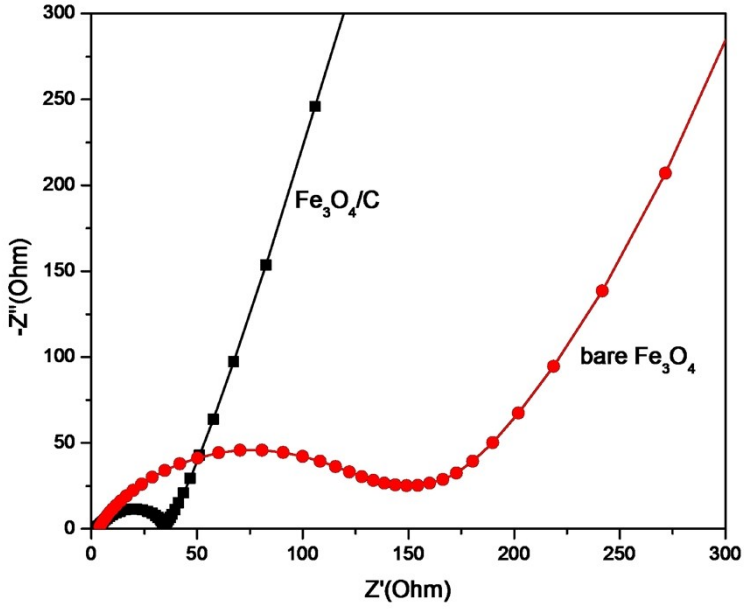

Fig.S7 Nyquist plots for of Fe_3O_4-NPs@C composite and pure Fe_3O_4 electrodes measured in the frequency range between 0.01 Hz and 1.0 MHz.