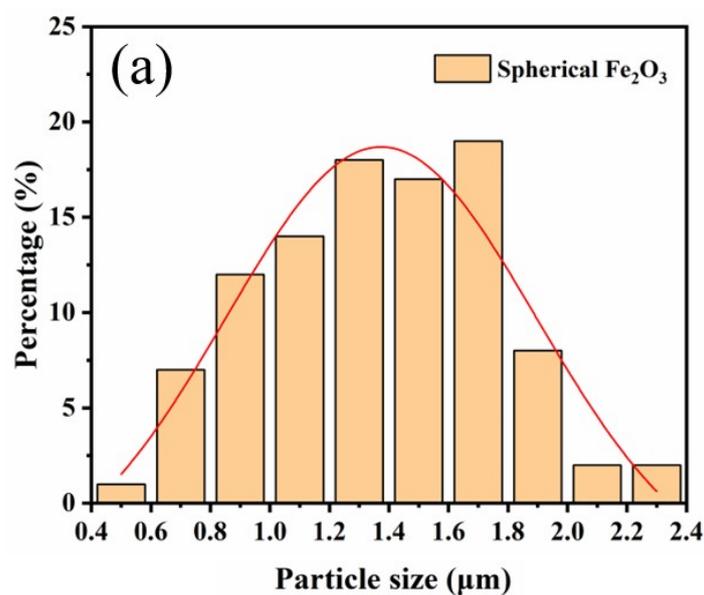


## Supporting Information

### **Fe<sub>2</sub>O<sub>3</sub> for stable K-ion storage: mechanism insight into dimensional construction from stress distribution and micro-tomography**

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**Figure S1.** The particle size distribution of spherical Fe<sub>2</sub>O<sub>3</sub>.



Figure S2. The particle size distribution of flower-like  $\text{Fe}_2\text{O}_3$ .

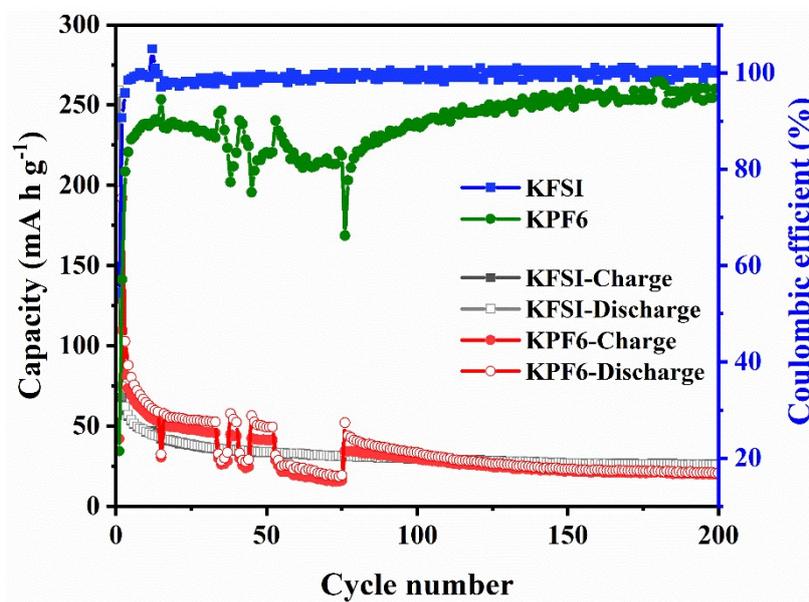
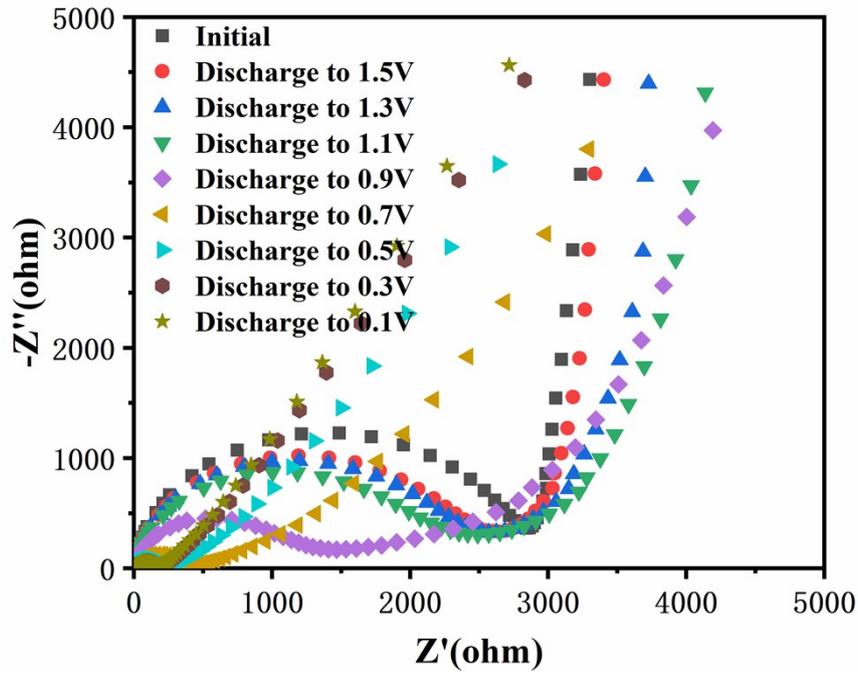
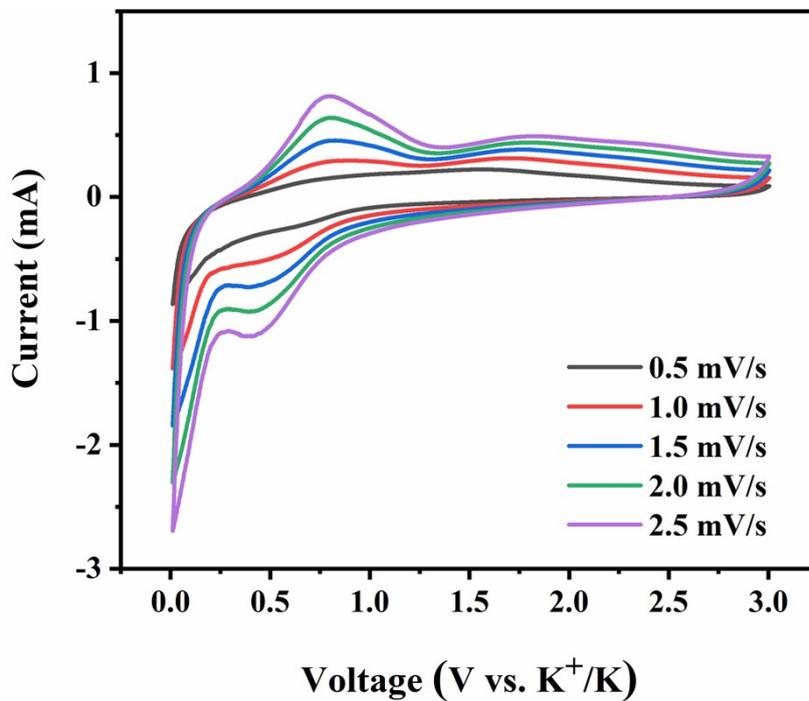


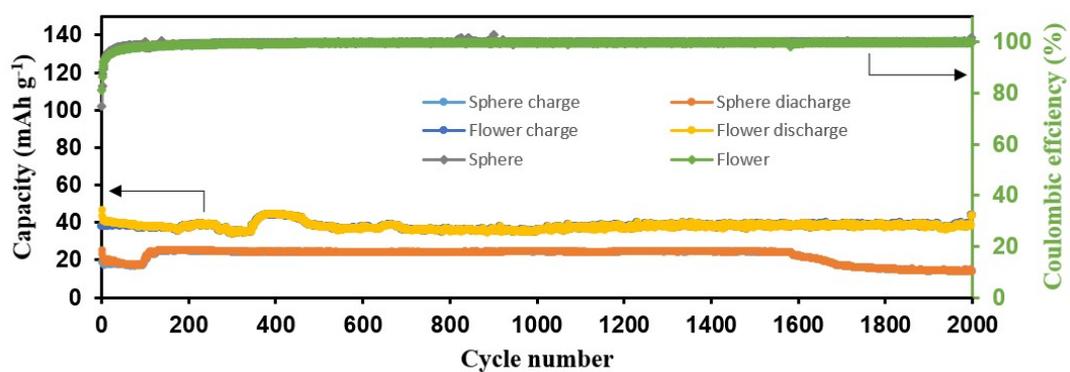
Figure S3. Cycling performance of  $\text{Fe}_2\text{O}_3$  electrode in two kinds of electrolytes.



**Figure S4.** Nyquist plots of the spherical  $\text{Fe}_2\text{O}_3$  during the first cycle at various discharge voltages.



**Figure S5.** CV curves of the spherical  $\text{Fe}_2\text{O}_3$



**Figure S6.** The long cycle performance of the spherical and flower-like  $\text{Fe}_2\text{O}_3$  at the current density of  $2 \text{ A g}^{-1}$  was also conducted