Supporting Information

A facile and highly efficient short-time homogenization hydrothermal approach for the smart production of high-quality $\alpha$-Fe$_2$O$_3$ for rechargeable lithium batteries

P. Santhoshkumar, K. Prasanna, Yong Nam Jo, I. Nirmal Sivagami, Suk Hyun Kang, and Chang Woo Lee*

Department of Chemical Engineering, College of Engineering, Kyung Hee University, 1732 Deogyeong-daero, Gihung, Yongin, Gyeonggi 17104, South Korea

Fig. S1. (a & b) UV-visible absorbance spectra and Tauc’s plot for mesoporous SFO and CFO.
**Fig. S2.** Warburg impedance spectra of $Z_{re}$ plotted against $\omega^{-0.5}$ for the SFO and CFO samples after 100th cycle.