Electronic Supplementary Material (ESI) for RSC Advances.

<Supporting Information>

Influence of Integrated Microstructure on Performance of $LiNi_{0.8}Co_{0.15}Al_{0.05}O_2$ as Cathodic Material for Lithium Ion Batteries

Yongjie Chen,[ab] Ping Li, [a] Sijia zhao [a], Yan Zhuang,[ab] Shiyong Zhao,[c] Qun Zhou, * [a] Junwei Zheng*[ab]

[a] College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou 215123, P. R. China.

[b] College of Physics, Optoelectronics and Energy, Soochow University, Suzhou 215006, P. R. China.

[c] Zhangjiagang Guotai Huarong New Chemical Material Co., Ltd, Zhangjiagang, P. R. China

E-mail address: jwzheng@suda.edu.cn (Junwei Zheng), zhq@suda.edu.cn (Qun Zhou)

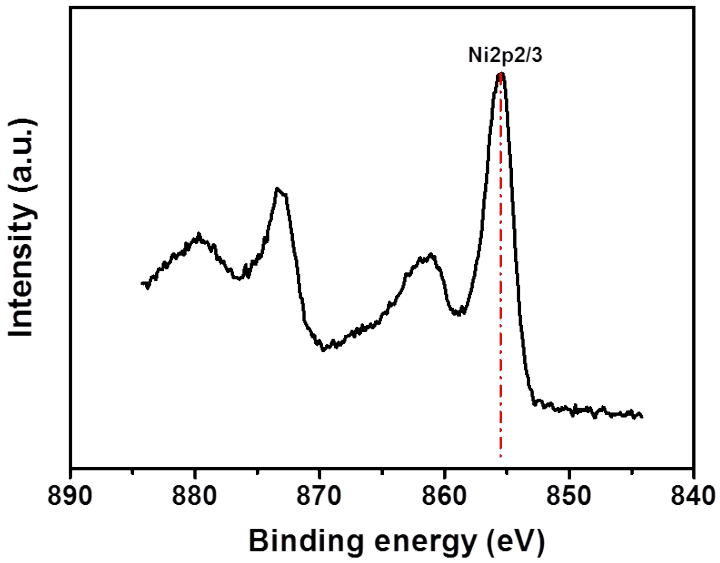

Figure S1 The Ni 2p XPS spectrum of $LiNi_{0.8}Co_{0.15}Al_{0.05}O_2$ powders.

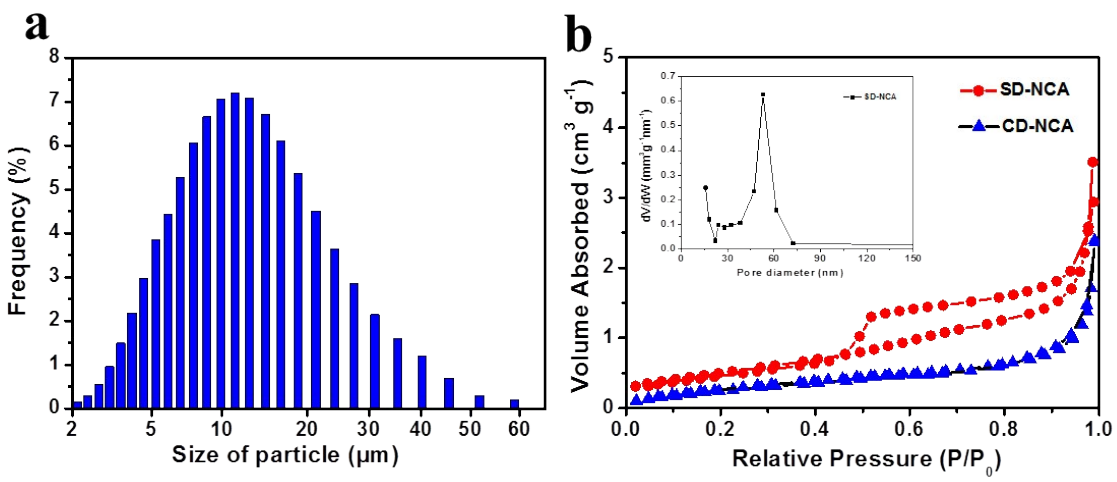

Figure S2 (a) Particle size distribution of SD-LNCA; (b) nitrogen adsorption/desorption isotherms of CD-LNCA and SD-LNCA; (d) the insert illustrates the pore size distribution of SD-LNCA.

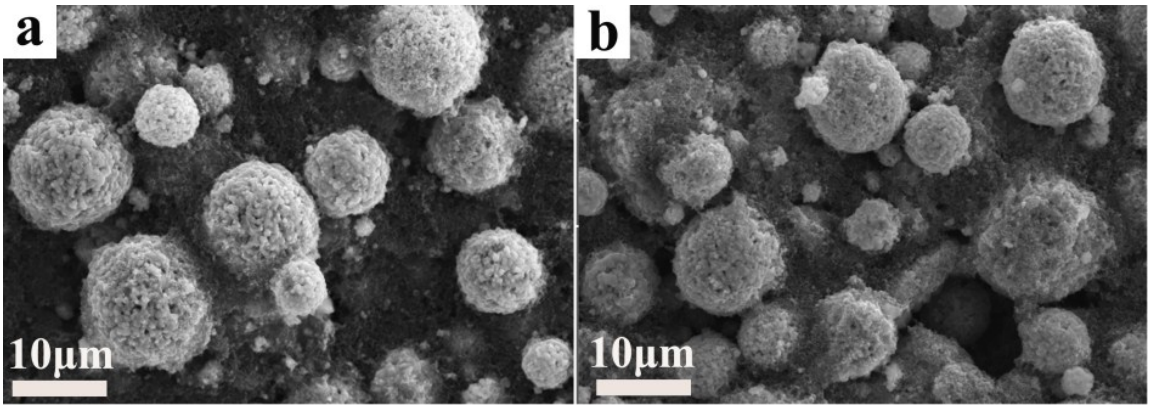

Figure S3 SEM graphs of SD-NCA after different CV cycles: (a) the first cycle; (b) the third cycle

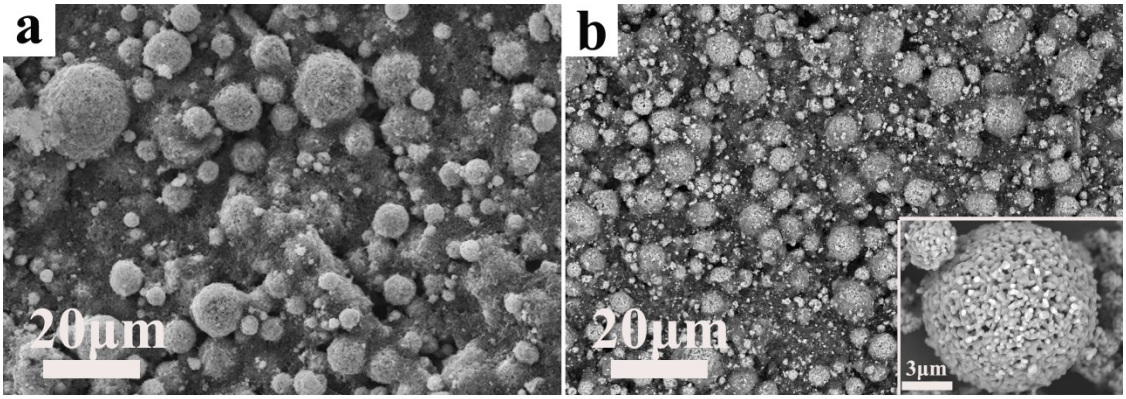

Figure S4 SEM graphs of SD-NCA (a) before and (b) after 100 cycles at 1C.