

Supplementary information

**Facile synthesis of porous Li-rich layered
Li[Li_{0.2}Mn_{0.534}Ni_{0.133}Co_{0.133}]O₂ as high-performance cathode
materials for Li-ion batteries**

**Chenwei Cao^a, Liujiang Xi^{ab}, Kwan Lan Leung^a, Man Wang^a, Ying Liu^a, Ruguang Ma^a,
Shiliu Yang^a, Zhouguang Lu^{*c} and C. Y. Chung^{*a}**

^a Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, PR China. Fax: +852 34420538; Tel: +852 34427835; E-mail:

luzg@sustc.edu.cn (LZG), appchung@cityu.edu.hk (CYC)

^b School of Metallurgical Engineering, Hunan University of Technology

^c Department of Materials Science & Engineering, South University of Science and Technology of China, Shenzhen, PR China.

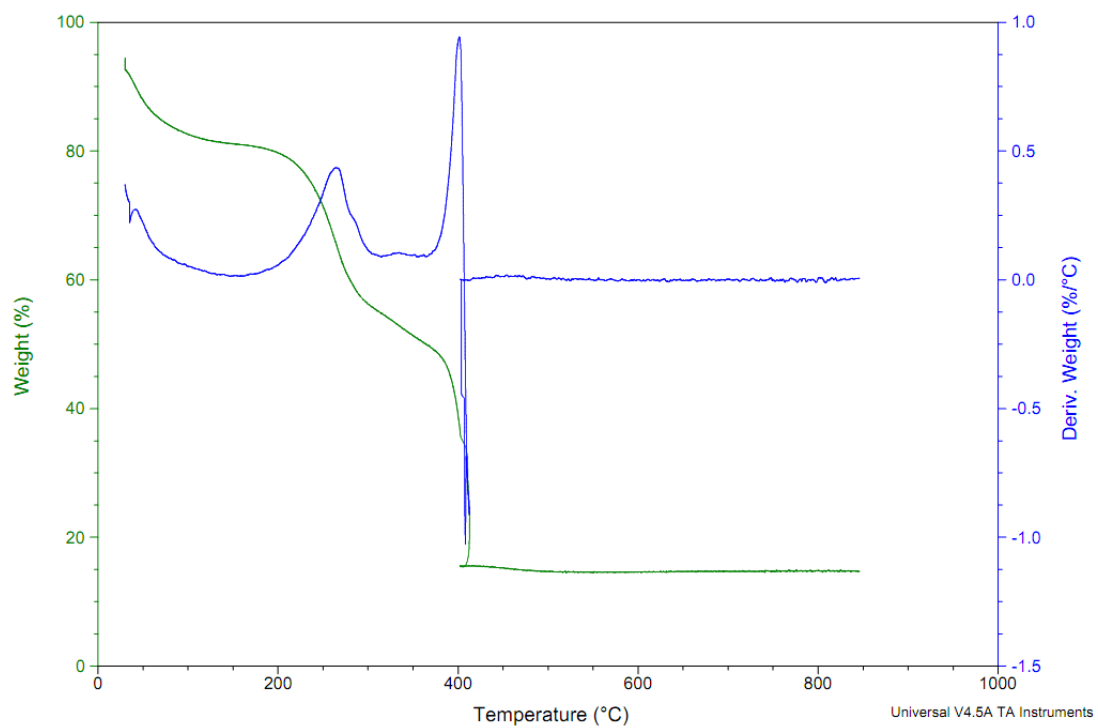


Fig. S1 TGA curves of the polymer-based precursor in the heating range 20 - 800°C.

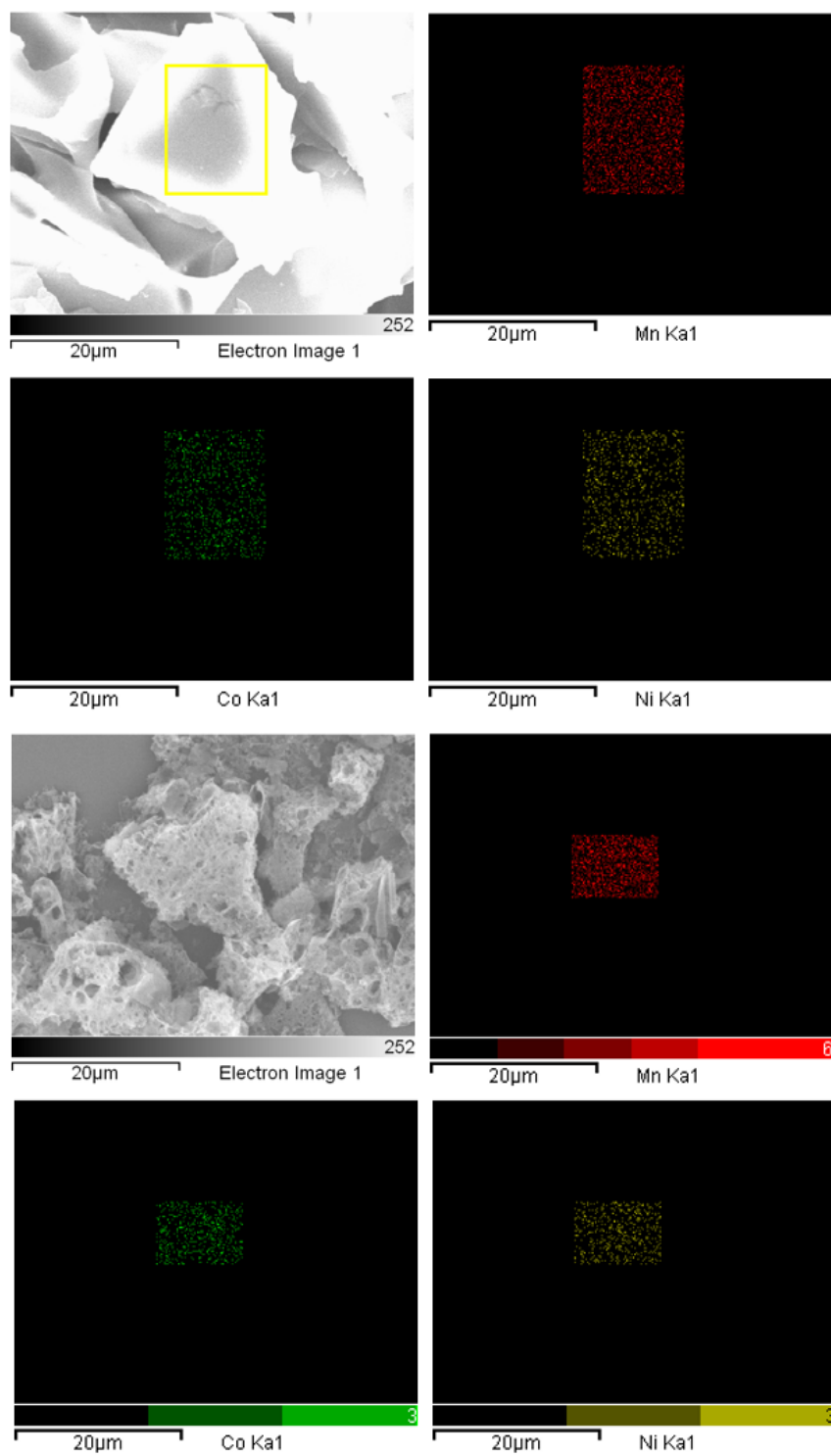


Fig. S2 EDS elemental mapping of the precursor and the $\text{Li}[\text{Li}_{0.2}\text{Mn}_{0.534}\text{Ni}_{0.133}\text{Co}_{0.133}]\text{O}_2$ layered oxides calcined at 750°C.

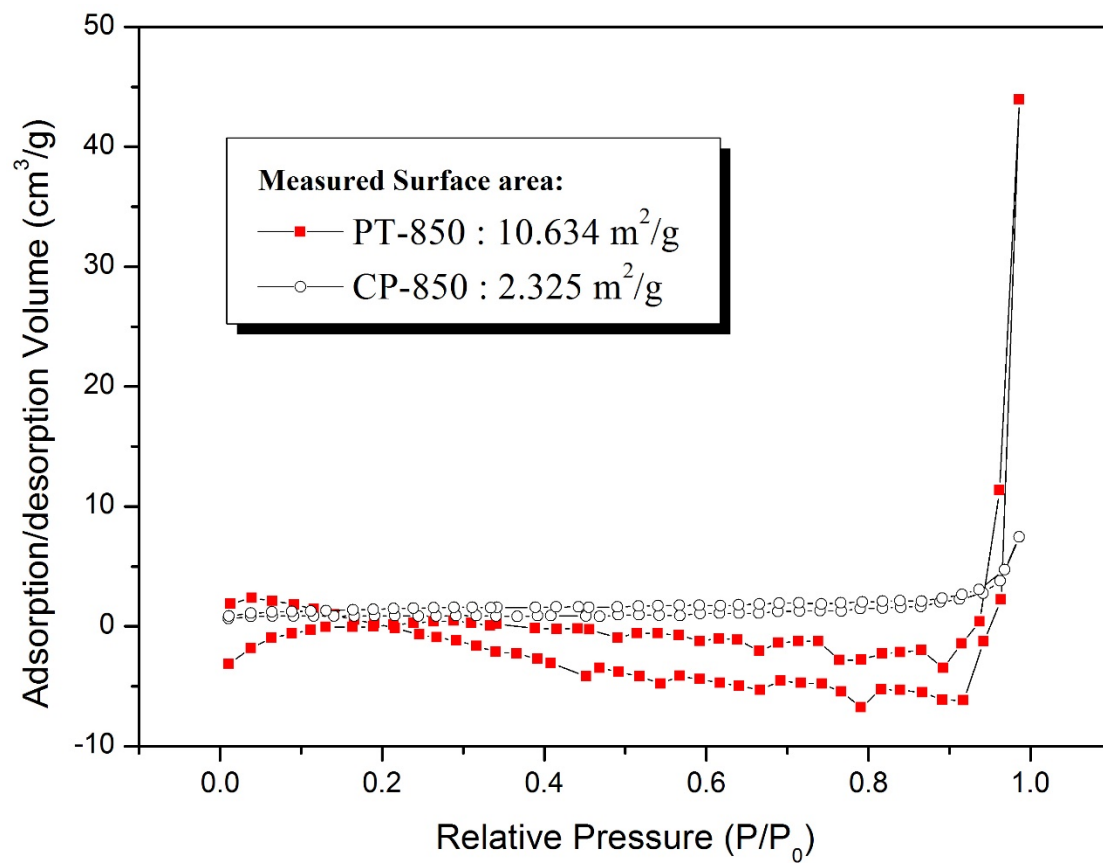


Fig. S3 N₂ adsorption/desorption isotherms of the sample PT-850 and CP-850.

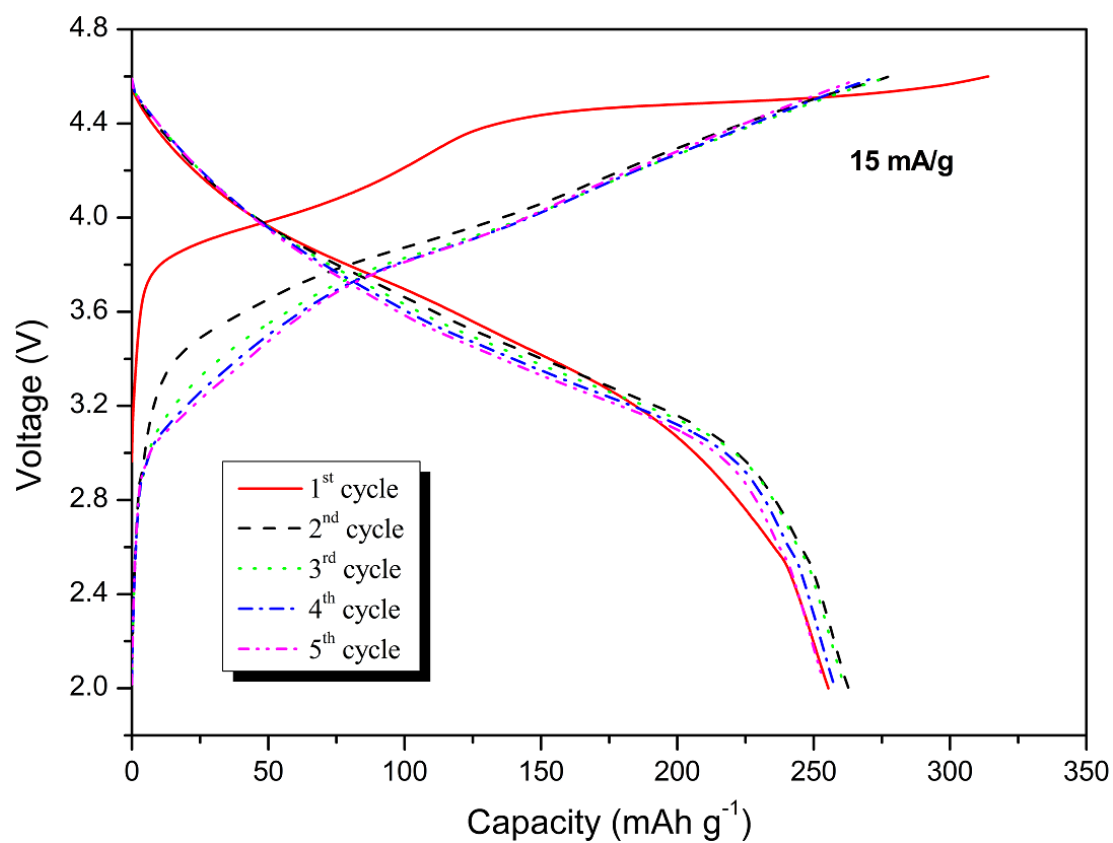


Fig. S4 Charge-discharge curves of sample PT-850 of the first five cycles at a current density of 15 mA g⁻¹.

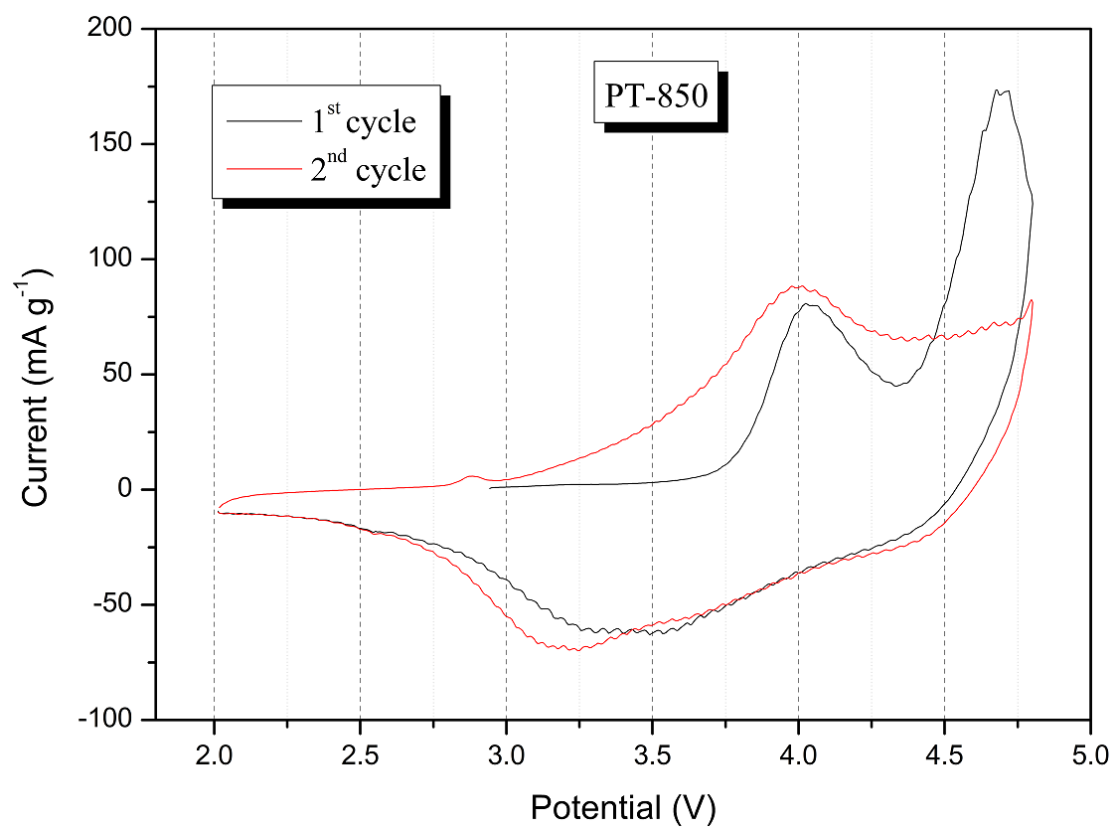


Fig. S5 Cyclic voltammetry (CV) curves of sample PT-850 of the first two cycles at a scan rate of 0.1 mV s^{-1} between 2 and 4.8 V.

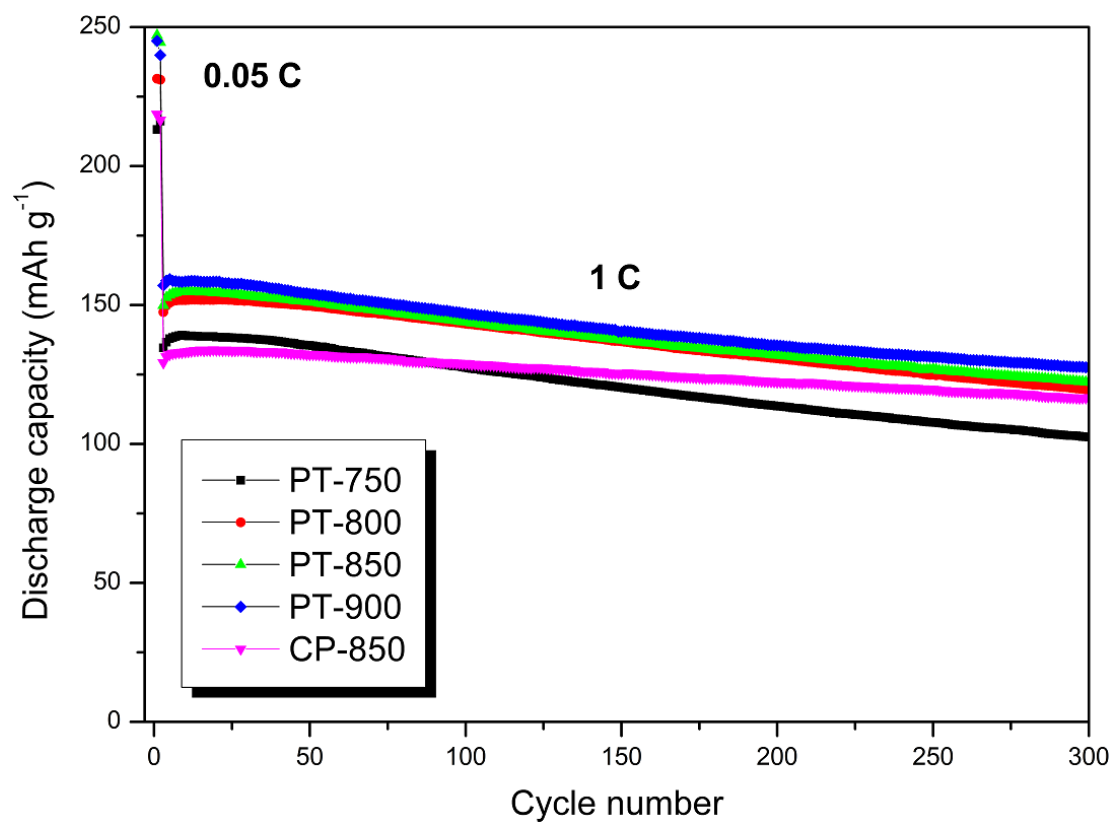


Fig. S6 Cyclic performance of the as-synthesized samples at 300 mA g⁻¹ (1C) between 2 and 4.6 V.