

Supporting Information

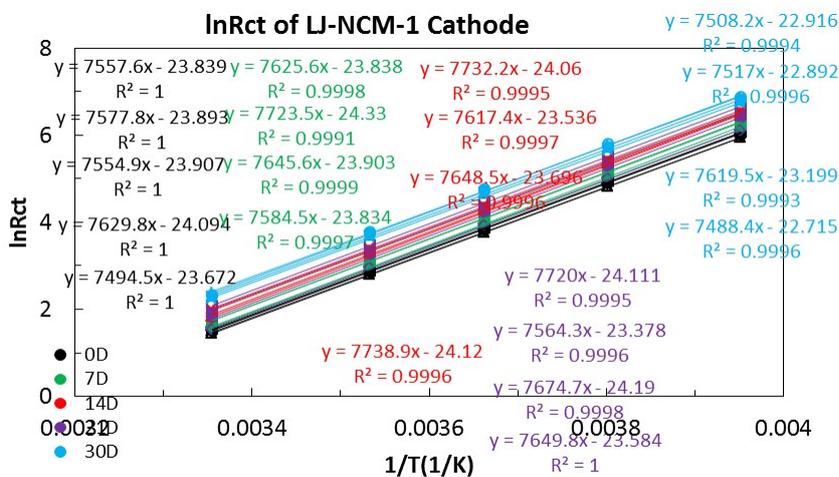


Figure S1 The linear fittings of the natural logarithm of the R_{ct} to the reciprocal of the EIS testing temperature $1/T$ for NMC811 cathode films obtained from different storage time, 0, 7, 14, 21 and 30 days, respectively.

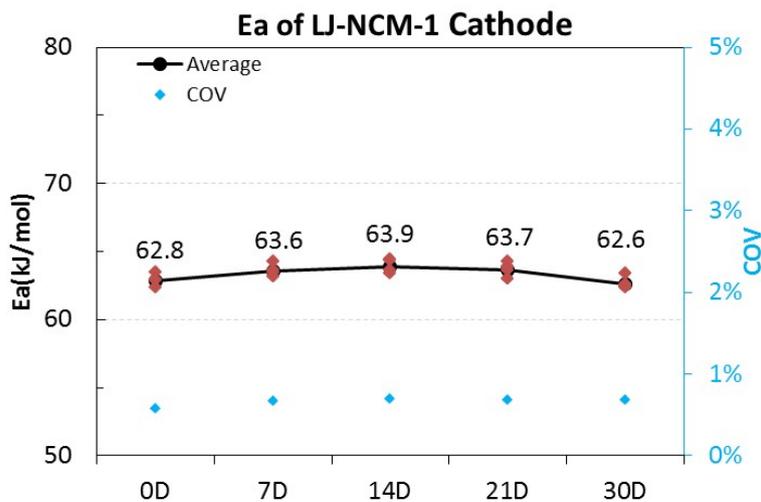


Figure S2 The charge transfer electrochemical reaction average activation energy E_a for NMC811 cathode films obtained from different storage time, 0, 7, 14, 21 and 30 days, respectively, derived from the slopes of the fitting linear equations in Figure S6.

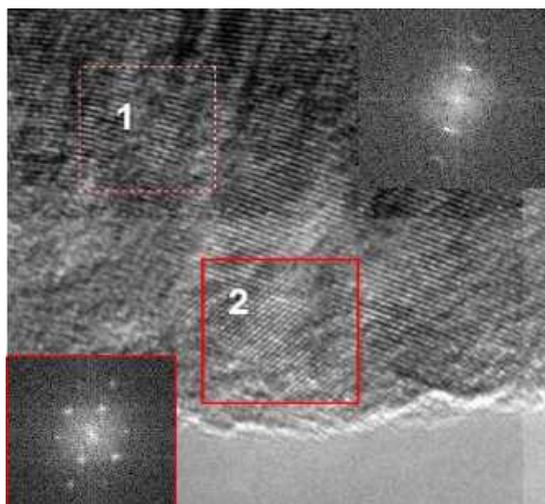


Figure S3 TEM and FFT images of NCM811 after 60°C storage for 30 days with obvious rock-salt phase on the surface of the particles.

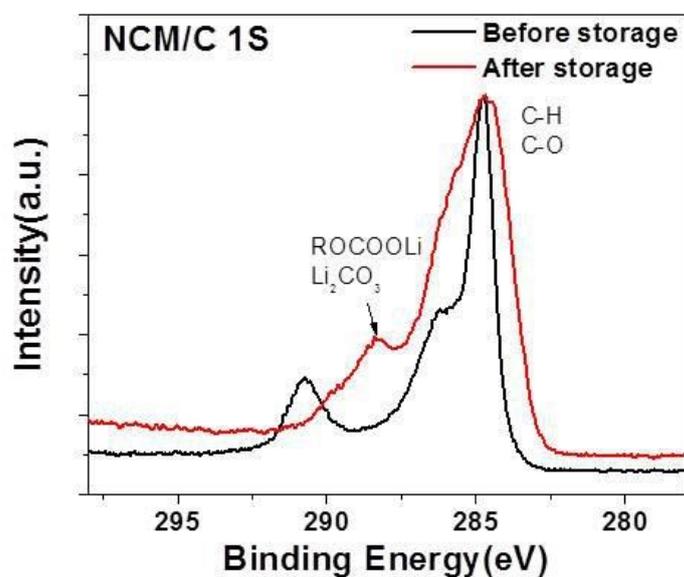


Figure S4 C 1s XPS spectra of the NCM811 before and after 60°C storage for 30 days. The electrolyte oxidation product, inorganic and organic salt are on the surface of the NCM811 particle.

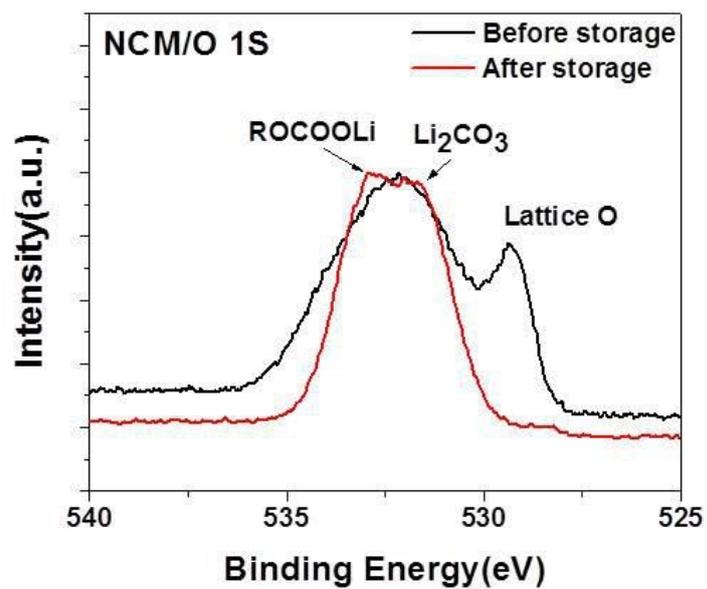


Figure S5 O 1s XPS spectra of the NCM811 before and after 60°C storage for 30 days. The electrolyte oxidation product, inorganic and organic salt are on the surface of the NCM811 particle.