Supporting Information

Detailed analysis of $Li_6PS_5Cl/LiNi_{0.5}Mn_{0.3}Co_{0.2}O_2$ composite electrode before electrochemical cycling

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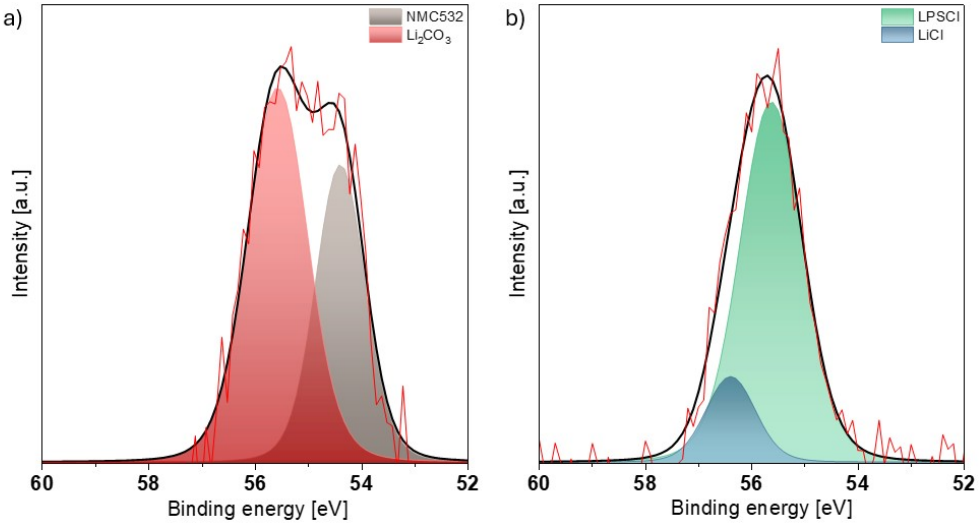

Figure S1. *Li1s core level spectrum of a) NMC532 sample and, b) LPSCl sample.*

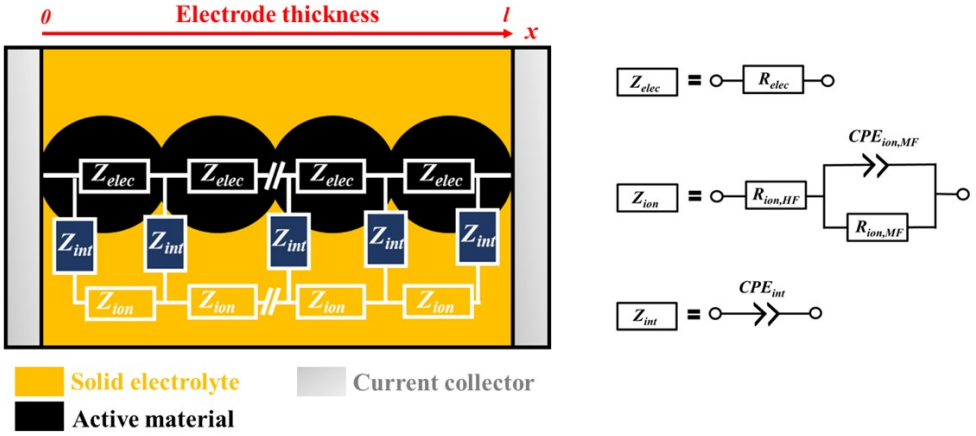

***Figure S2**. Transmission Line Model used for composite electrode. The expression of the different elements are :*

$Z_{elec} = R_{elec}$, $Z_{int} = \frac{1}{(j\omega)^{\alpha} Q_{int}}$, $Z_{ion} = R_{ion,HF} + \frac{R_{ion,MF}}{1 + R_{ion,MF}(j\omega)^{\alpha} Q_{ion,MF}}$.