

## The Impact of Oxygen Evolution And Cations Migration on Cycling

### Stability of Li-rich $\text{Li}[\text{Li}_{0.2}\text{Mn}_{0.6}\text{Ni}_{0.1}\text{Co}_{0.1}]\text{O}_2$ positive electrode

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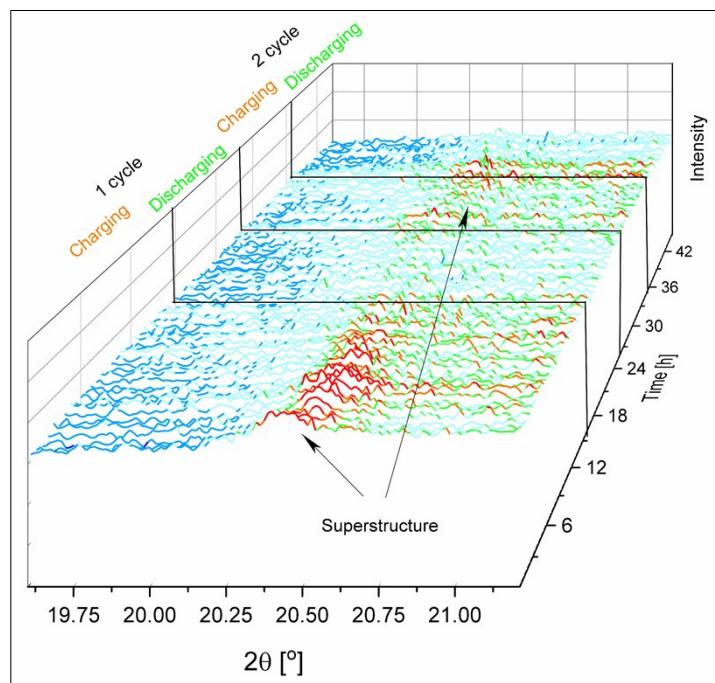
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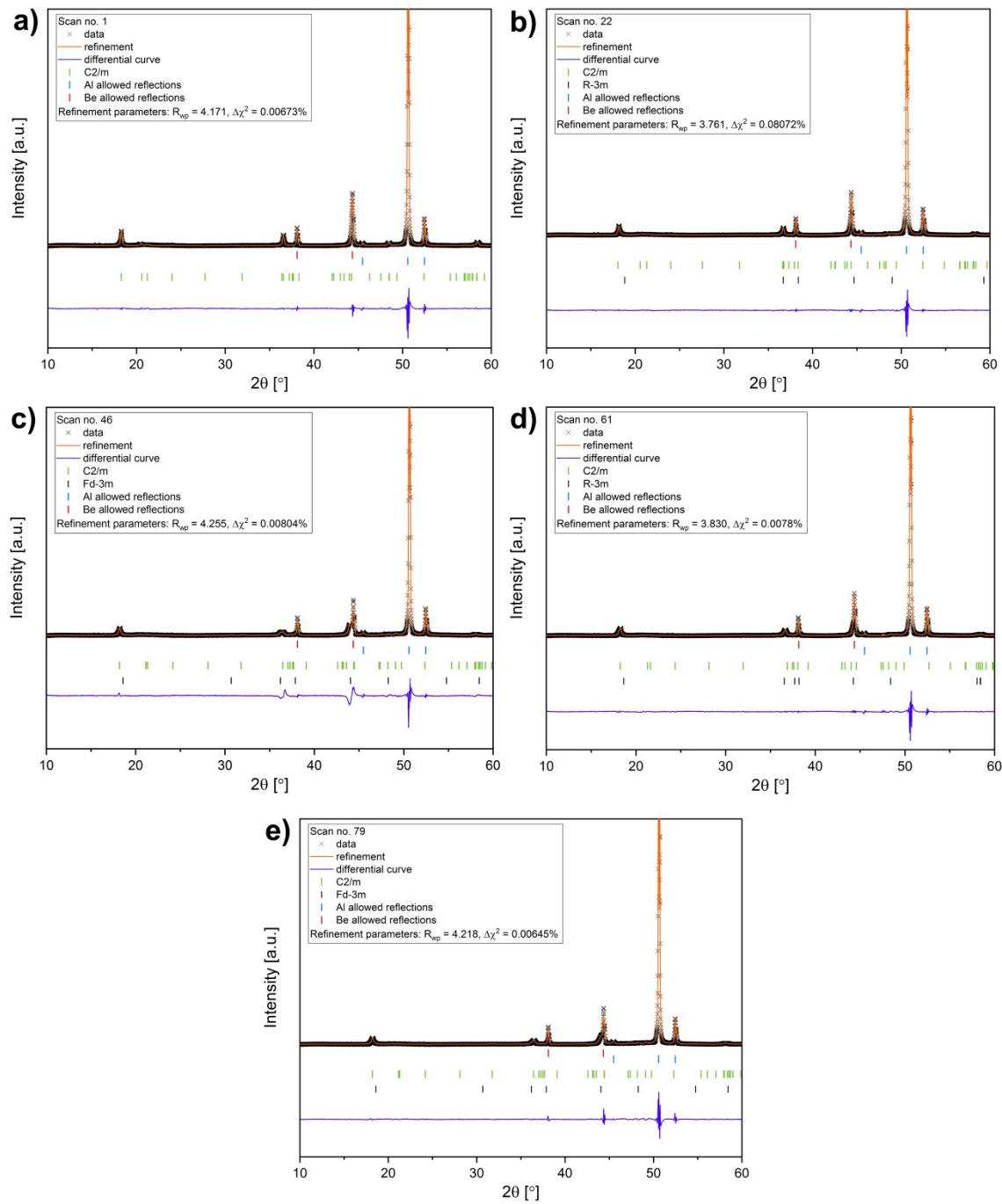
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**Fig. S1.** In-situ XRD patterns with superstructure area of the  $\text{Li}[\text{Li}_{0.2}\text{Mn}_{0.6}\text{Ni}_{0.1}\text{Co}_{0.1}]\text{O}_2$  with corresponding 1<sup>st</sup> and 2<sup>nd</sup> charge/discharge cycles versus time.



**Fig. S2.** Selected operando XRD patterns with Rietveld refinement obtained during 1<sup>st</sup> and 2<sup>nd</sup> charge/discharge processes of the Li/Li<sup>+</sup>/Li[Li<sub>0.2</sub>Mn<sub>0.6</sub>Ni<sub>0.1</sub>Co<sub>0.1</sub>]O<sub>2</sub> cell.