

Supplemental data

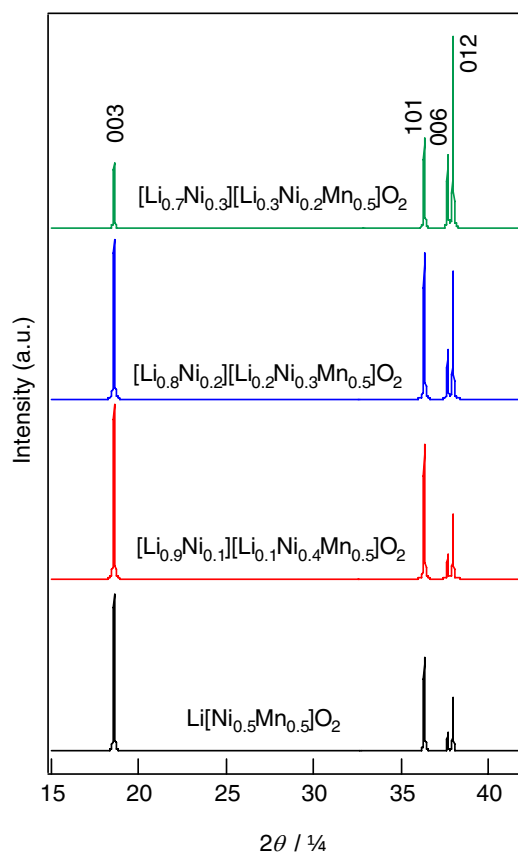


Fig. S1. Simulated XRD patterns of $\text{LiNi}_{0.5}\text{Mn}_{0.5}\text{O}_2$ with different degrees of cation mixing.

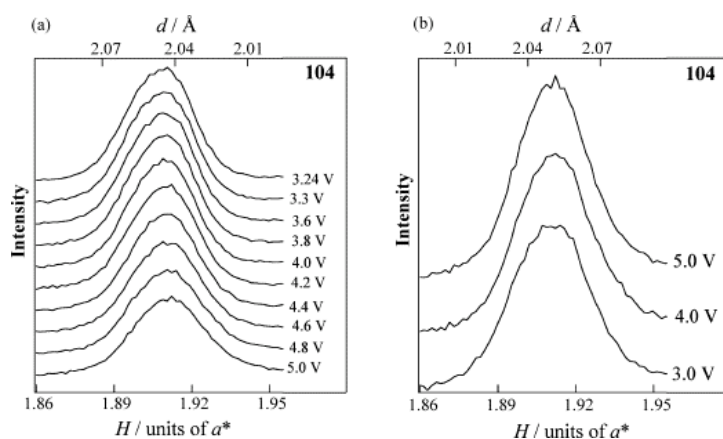


Fig. S2. In situ XRD patterns for $\text{LiNi}_{0.5}\text{Mn}_{0.5}\text{O}_2(003)$ with a large degree of cation mixing. The peak shifts during anodic polarization from the initial voltage to 5.0 V (a) and the shift during cathodic polarization to 3.0 V (b). [Ref. 15]

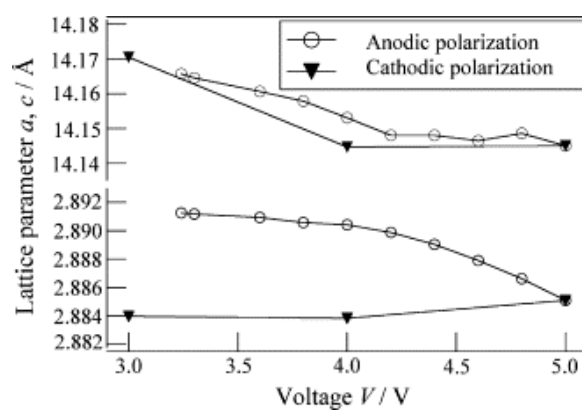


Fig. S3. Voltage dependence of $\text{LiNi}_{0.5}\text{Mn}_{0.5}\text{O}_2(003)$ lattice parameters with a large degree of cation mixing. [Ref. 15]