Supplementary Material for "Effect of fluorine substitution on the electrochemical property and structural stability of Li-excess cation disordered rock-salt cathode"

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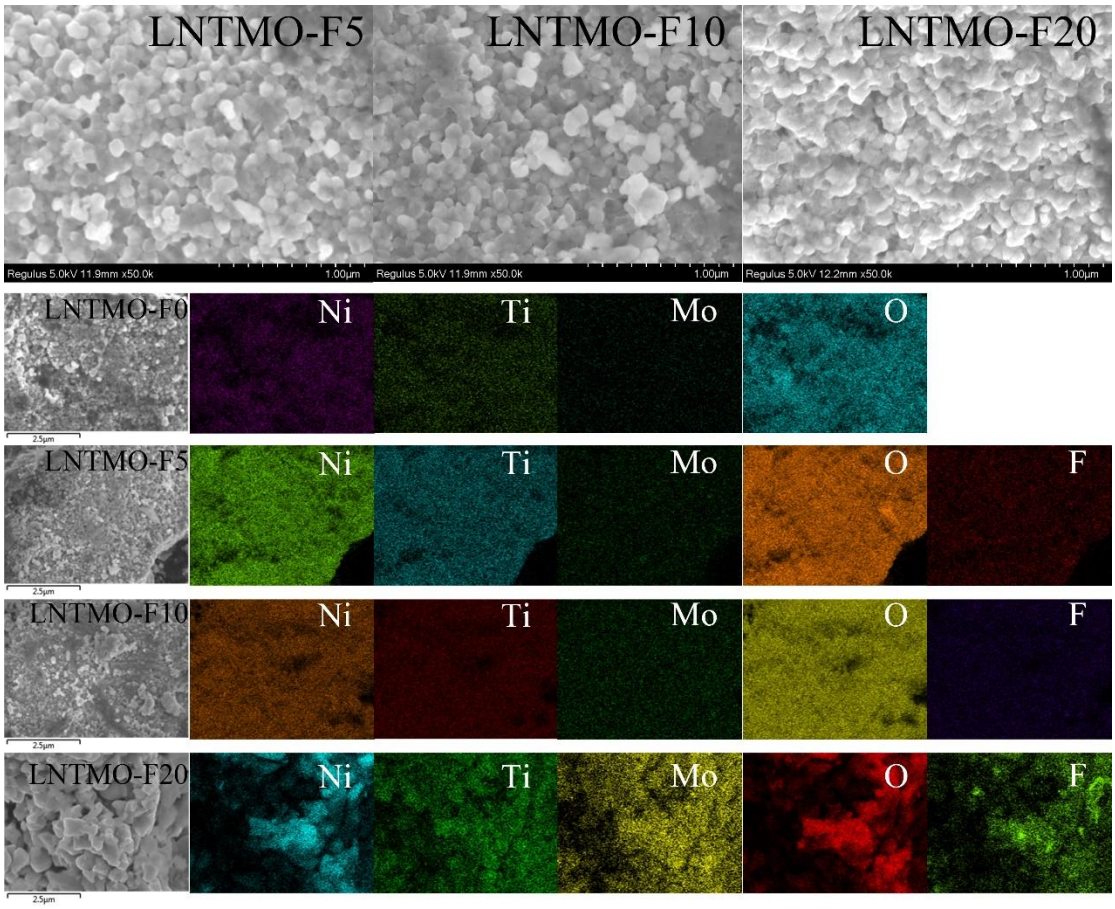

Fig. S1: Morphological observation from SEM images of $Li_{1.14}Ni_{0.57+0.5x}Ti_{0.19-0.5x}Mo_{0.10}O_{2-x}F_x$ (x=0.05, 0.10, and 0.20) and EDS mapping of elemental distributions of $Li_{1.14}Ni_{0.57+0.5x}Ti_{0.19-0.5x}Mo_{0.10}O_{2-x}F_x$ (x=0, 0.05, 0.10, and 0.20).

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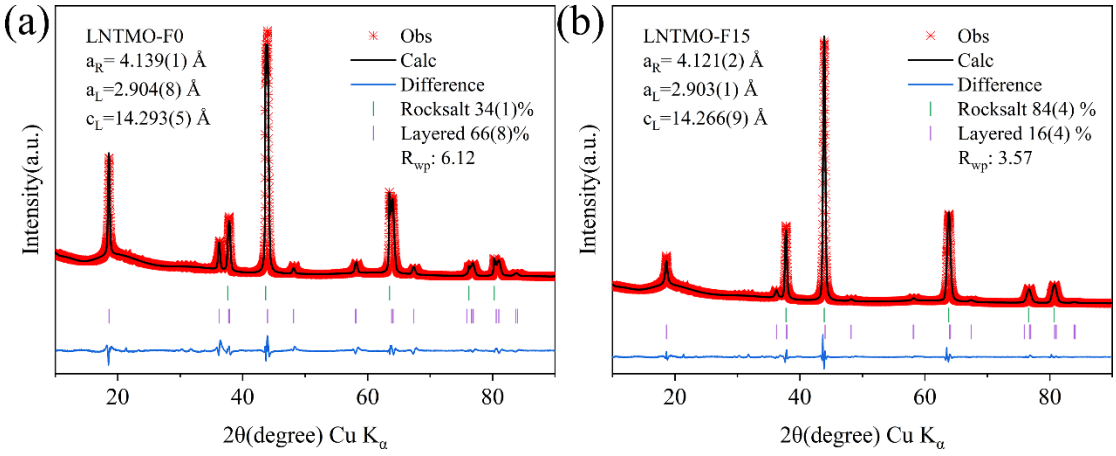

Fig. S2: Refined XRD patterns of (a) LNTMO-F0 and (b) LNTMO-F15.

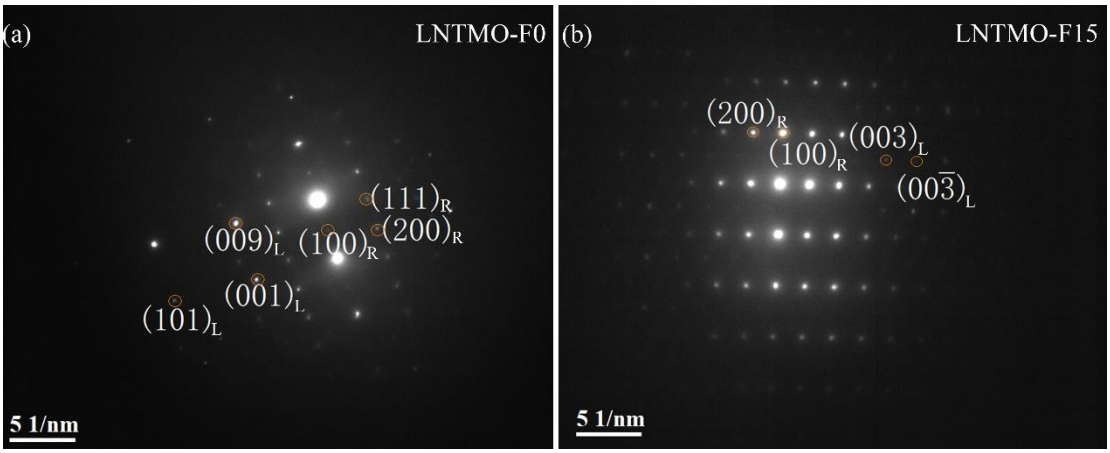

Fig. S3: Electron diffraction patterns of (a) LNTMO-F0 and (b) LNTMO-F15.

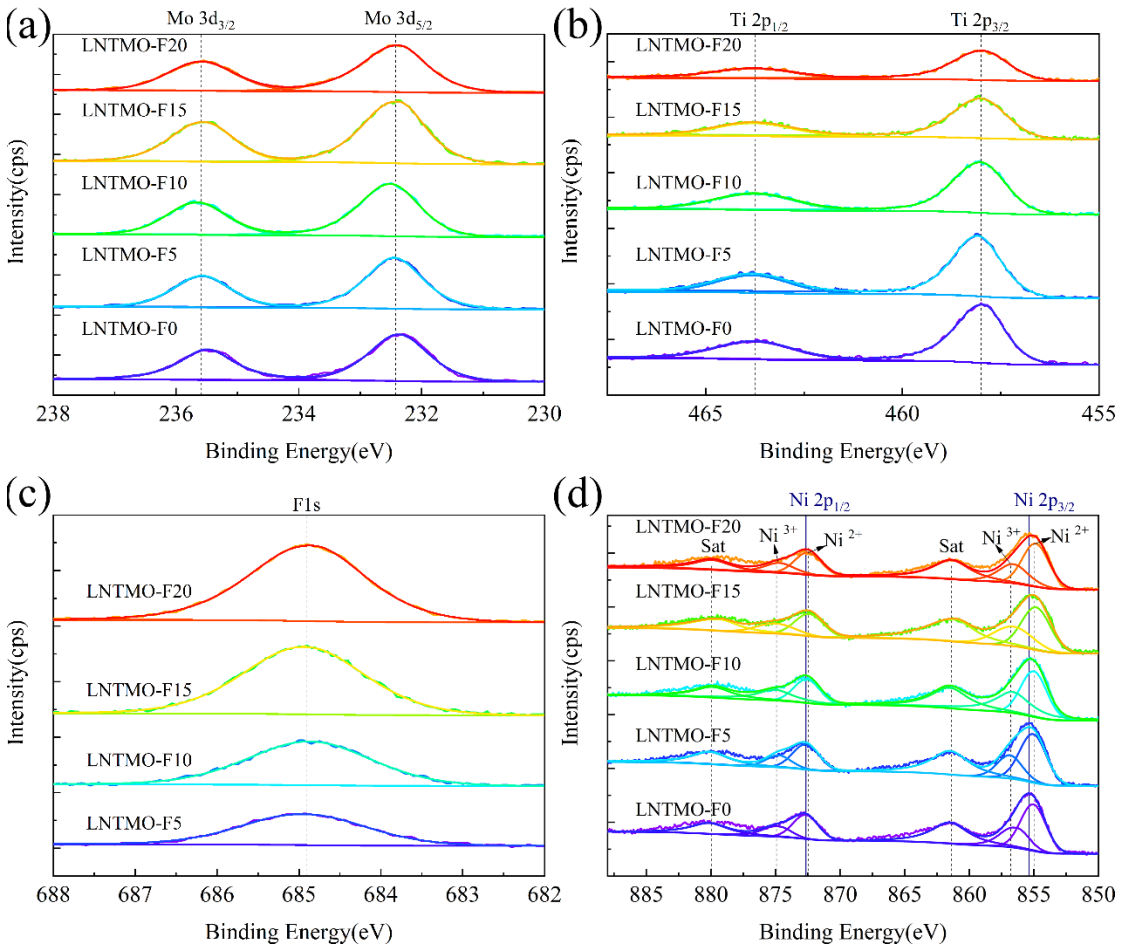

Fig. S4: X-ray photoelectron spectroscopy of $Li_{1.14}Ni_{0.57+0.5x}Ti_{0.19-0.5x}Mo_{0.10}O_{2-x}F_x$ (x=0, 0.05, 0.10, 0.15, and 0.20) powder: (a) molybdenum 3d, (b) titanium 2p, (c) fluorine 1s, (d) nickel 2p.

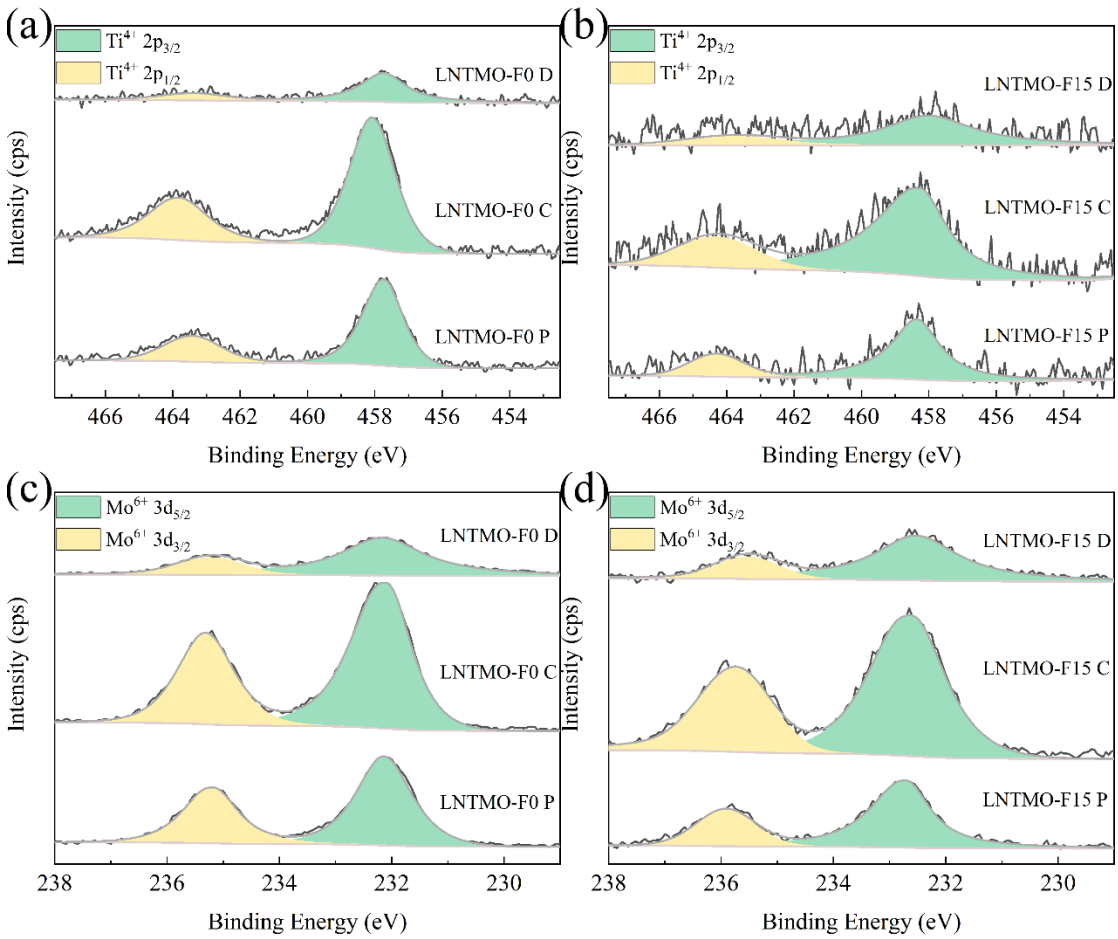

Fig. S5: X-ray photoelectron spectroscopy of the pristine, first charged and first discharged $Li_{1.14}Ni_{0.57+0.5x}Ti_{0.19-0.5x}Mo_{0.10}O_{2-x}F_x$ (x=0, 0.15) electrode: (a), (b) titanium 2p, (c), (d) molybdenum 3d.