Electronic Supplementary Information (ESI)

Structure refinements of X-ray diffractograms were made using GSAS (general structure analysis system) program. The black cross in Fig. 1B indicates the measured diffraction intensity; the red line shows the fitted one and the pink bars represent angular position of the possible Bragg reflections for the major phase. The difference pattern (blue line) is shown between the experimental data and calculated pattern. Lattice parameters, zero point error, scale factor and the background are refined. Profile parameters (i.e. U, V, W) were refined next. Structural parameters are refined including the atomic coordinates and isotropic atomic displacement parameters for all the atoms. Here we particularly constrain the atom Zn and Mn to the same site and fix the occupancy factor of Mn to 2% which gives a well fitting performance. Besides, the U_{iso} of all the oxygen atoms are constrained to be equal. However, we have noticed that it is difficult to obtain a reasonable value if the U_{iso} of Li (2) takes part into the refinement. So, we set it to 0.01 and ascribe this to the highly transferable feature of lithium ion at this site. In addition, neither the absorption/reflectivity correction nor spherical harmonic (ODF) preferential orientation are applied in our refinement process.