Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Investigation of the exceptional charge performances of $Li_{4-x}Mn_2O_5$ as Li-ion Battery electrode material

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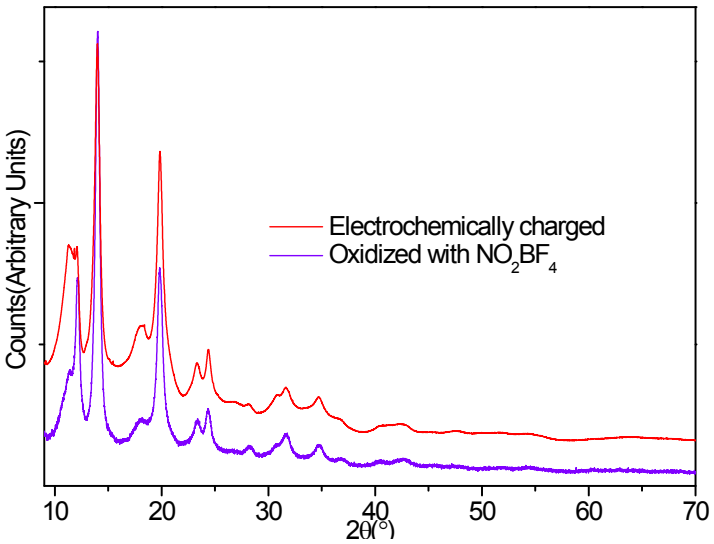

Figure SI-1. X-ray diffraction data for electrochemically charged (red) and chemically oxidized (violet) $Li_{4-x}Mn_2O_5$.

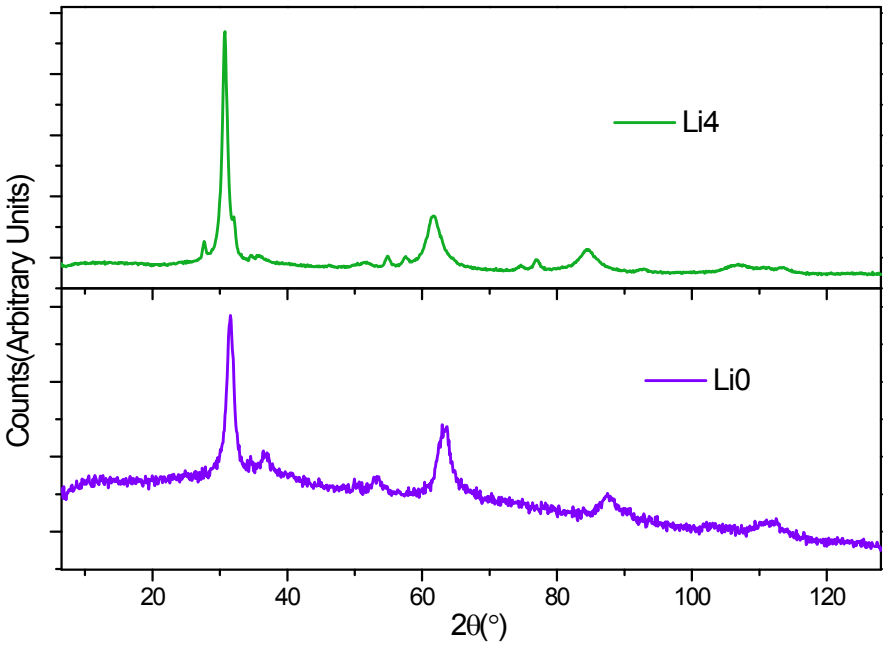

Figure SI-2. Acquired NPD patterns. The 2θ region of the Rietveld refinements was reduced to the range given in Figure 5 of the main text where peaks are observed.

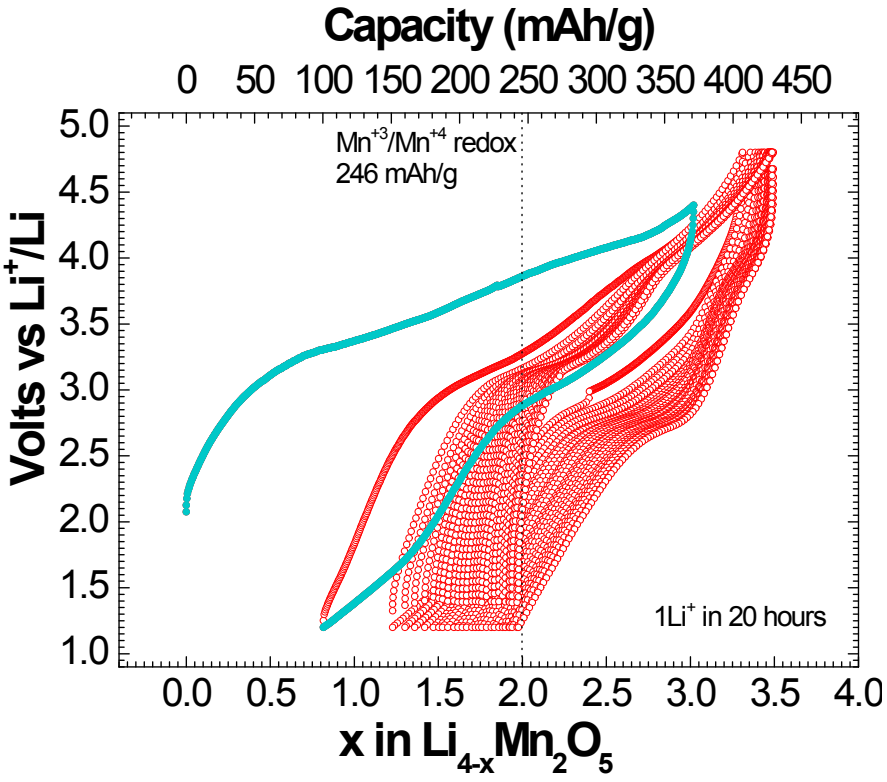

Figure SI-3. Typical voltage-composition profile of $Li_4Mn_2O_5$ obtained at C/80, in coin cell.

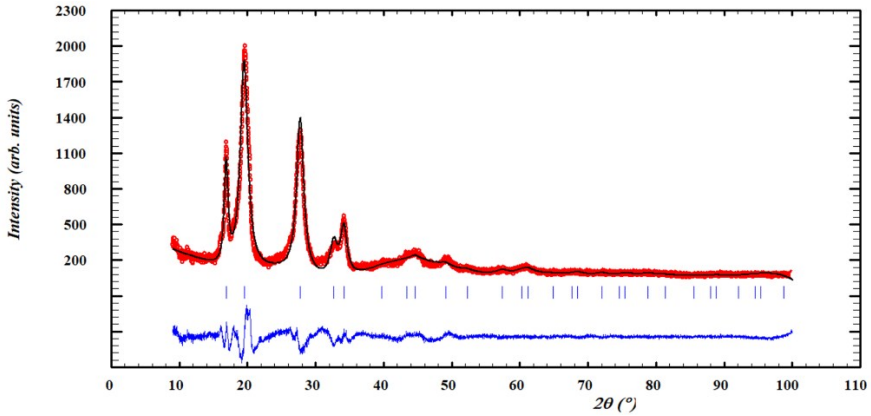

Figure SI-4. Le Bail profile fitting of the X-ray diffraction pattern of $Li_{3.6}Mn_{2.4}O_{5.4}$ (a = 4.17 Å) without any trace of Li_2O. The data was a collected with a Bruker D8 Advance diffractometer equipped with a Mo source $K_{\alpha,1}$ = 0.7093 Å.

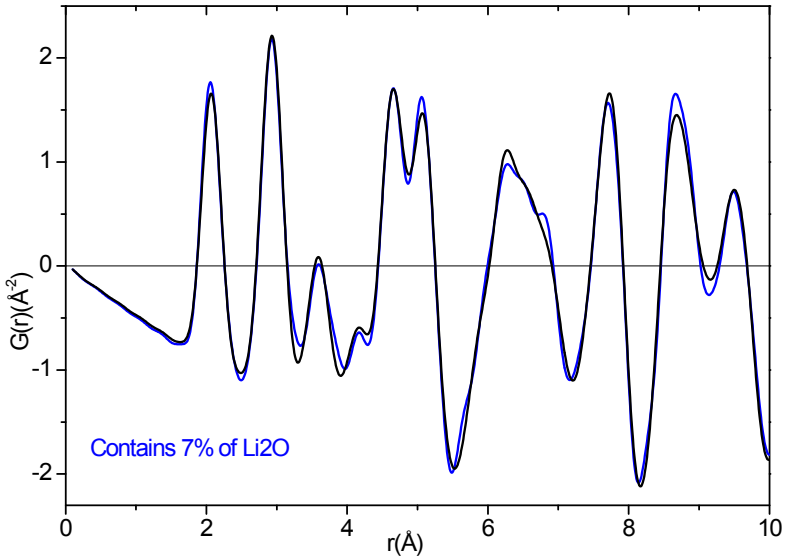

Figure SI-5. PDF simulation of a main Li4 phase with an MnO structure with (blue) and without (black) 7 wt% of Li_2O.

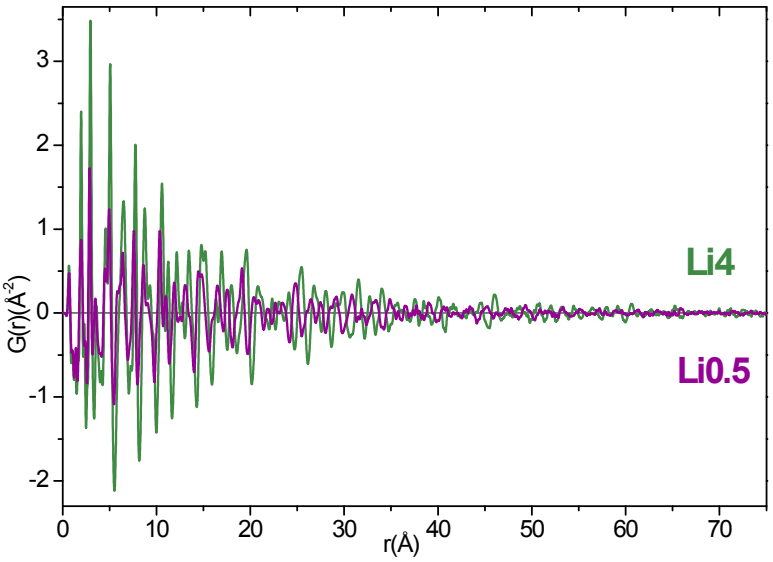

Figure SI-6. PDF data showing a coherent size domain of around 6 nm.

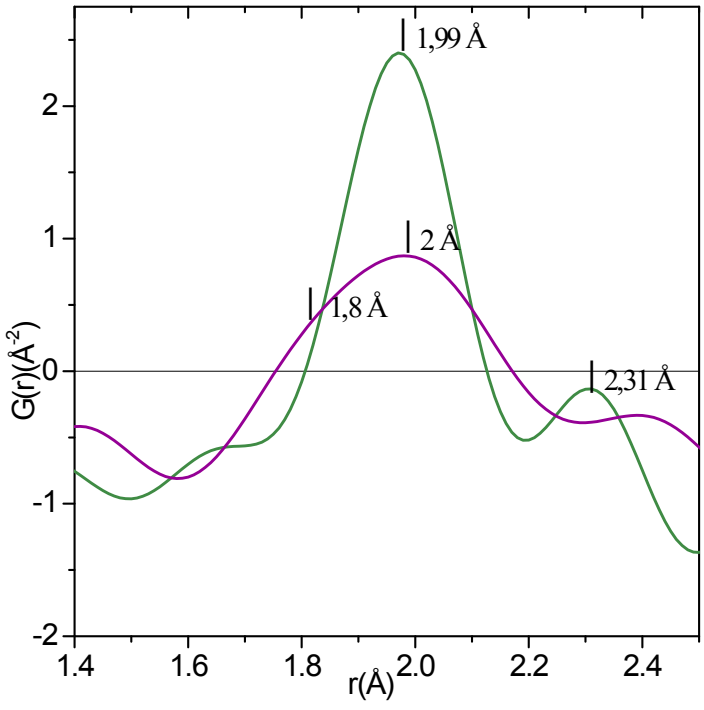

Figure SI-6. First PDF peaks for Li4 (green) and Li0.