

Supporting Material

Degradation of HV cathodes for advanced lithium ion batteries – differential capacity study on differently balanced cells

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Raman spectra of ordered $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$

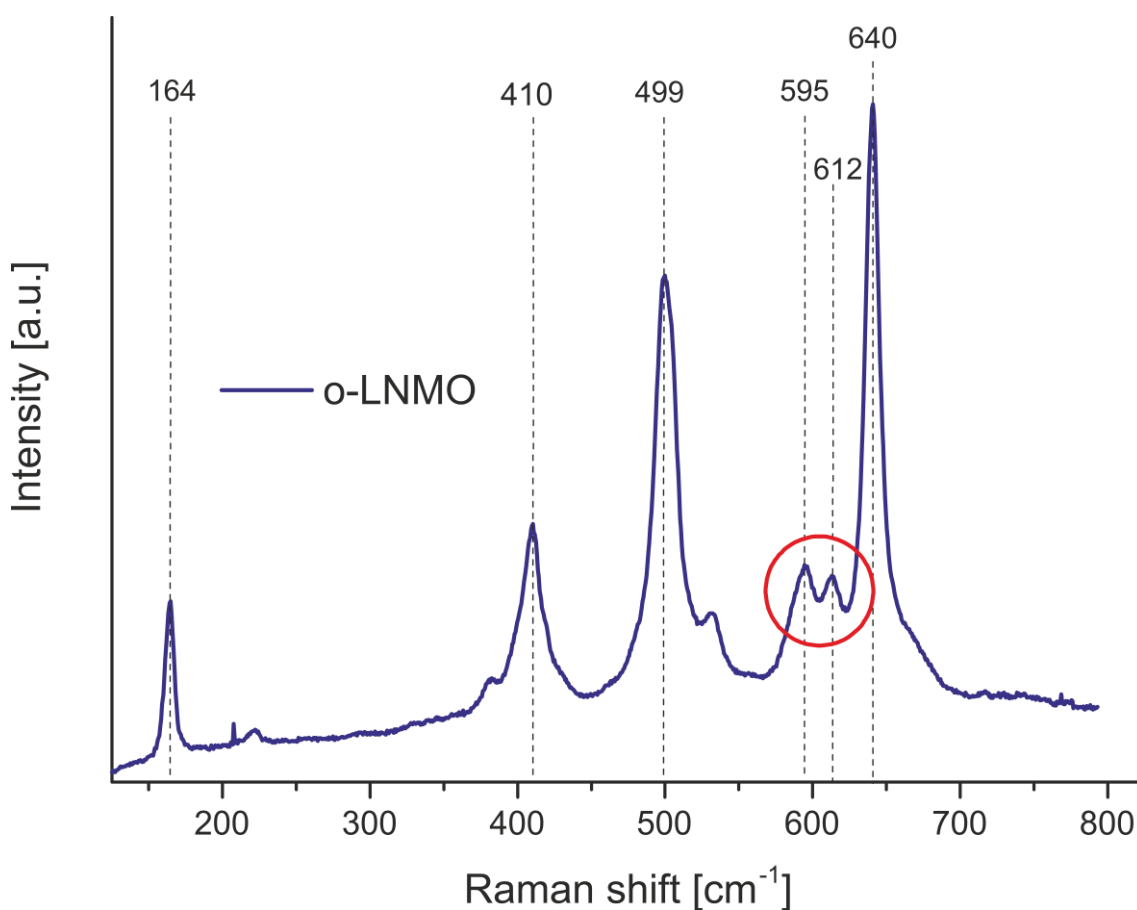


Figure S1. Raman spectra at an excitation wavelength λ of 785 nm (Laser from Oxxius, 13.5 mW) of ordered $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$. The scattered light was gathered by a high aperture microscope objective and analysed with a Shamrock detector (800 l/mm grating, 80 μm slit and 55 s accumulation time) and Andor Solis software.

Figure S1 shows the Raman spectra of ordered $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ at an excitation wavelength λ of 785 nm. The red circle shows two local maxima (595 and 612 cm^{-1}), which are typical for ordered $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$. Disordered $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ has at this Raman shift a plateau, which is not separated in two peaks. [1]

Reference

- [1] Samarasingha, P. B.; Andersen, N. H.; Sørby, M. H.; Kumar, S.; Nilsen, O.; Fjellvåg, H., Neutron diffraction and Raman analysis of $\text{LiMn}_{1.5}\text{Ni}_{0.5}\text{O}_4$ spinel type oxides for use as lithium ion battery cathode and their capacity enhancements. *Solid State Ionics* 2016, 284, 28-36.