

Supporting Information

Residual Li₂O degrades PVdF during the preparation of NMC811 slurries for Li-ion batteries

*Angelica Laurita,^{*a} Liang Zhu,^b Pierre-Etienne Cabelguen,^b Jérémie Auvergniot,^b Dominique Guyomard,^a Philippe Moreau^a and Nicolas Dupré^{*a}*

^aUniversité de Nantes, CNRS, Institut des Matériaux Jean Rouxel (IMN), F – 44000, Nantes, France

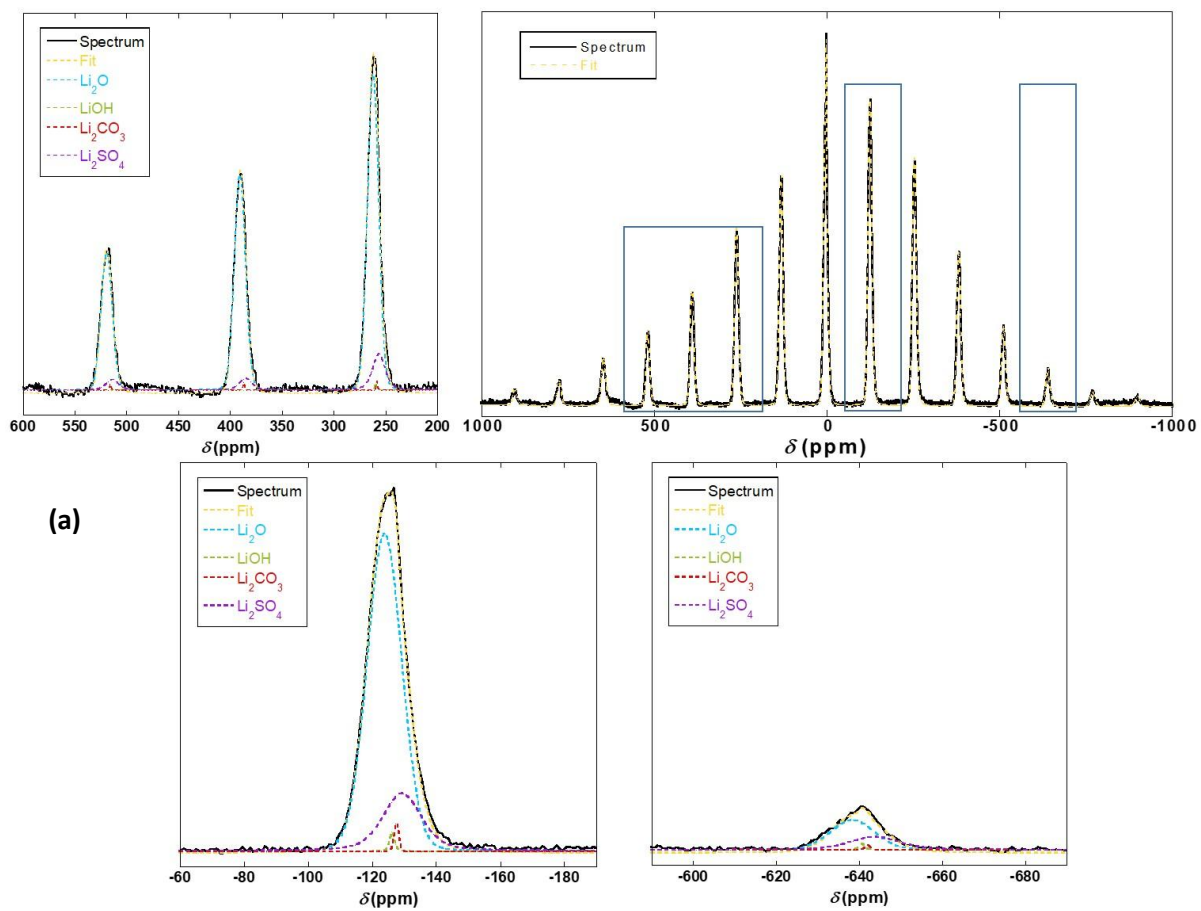
^bUmicore, 31 rue du marais, Brussels BE-1000, Belgium.

* : Corresponding authors

Table S1. Parameters from ^7Li MAS-NMR signal features for Sample 1, 2 and 3 and corresponding quantification. All the spectra were calibrated with respect to LiCl. Surface diamagnetic lithium amounts evaluated by ^7Li MAS-NMR given in $\mu\text{molLi/g}_{\text{AM}}$ with an error of $\pm 10\%$.*.

	δ (ppm)		FWHM (ppm)		Amount ($\mu\text{mol/g}_{\text{AM}}$)	
Sample 1						
	powder	slurry	powder	slurry	powder	slurry
Li₂O	4.6	4.6	13	13	46	59
Li₂SO₄	-0.6	-0.6	16	13	10	19
LiOH	2.4	2.6	3	4	3	2
Li₂CO₃	1.0	1.0	3	3	0.3	1
LiF	---	0.2	---	3	---	2
Total Li					115.6	162
Sample 2						
	powder	slurry	powder	slurry	powder	slurry
Li₂O	4.7	4.7	12	12	63	76
Li₂SO₄	-0.8	-0.4	14	11	15	18
LiOH	2.4	2.4	2	2	2	3
Li₂CO₃	1.0	1.1	2	2	1	2
LiF	---	0.2	---	3	---	3
Total Li					160	198
Sample 3						
	powder	slurry	powder	slurry	powder	slurry
Li₂O	4.7	4.6	14	13	43	46
Li₂SO₄	-0.6	-0.9	15	11	6	22
LiOH	2.4	2.4	2	4	0.3	6
Li₂CO₃	1.2	1.1	1	3	0.1	4
LiF	---	0.2	---	5	---	13
Total Li					98.5	163

*: The 10% error comes from the reliability factor of the dmfit program used to fit the MAS NMR data. It is an error on the integrated intensity (arbitrary unit) absolute value and depends only on the quality of the NMR spectrum and not directly on the measured amount of lithium nuclei in $\mu\text{mol.g}^{-1}$



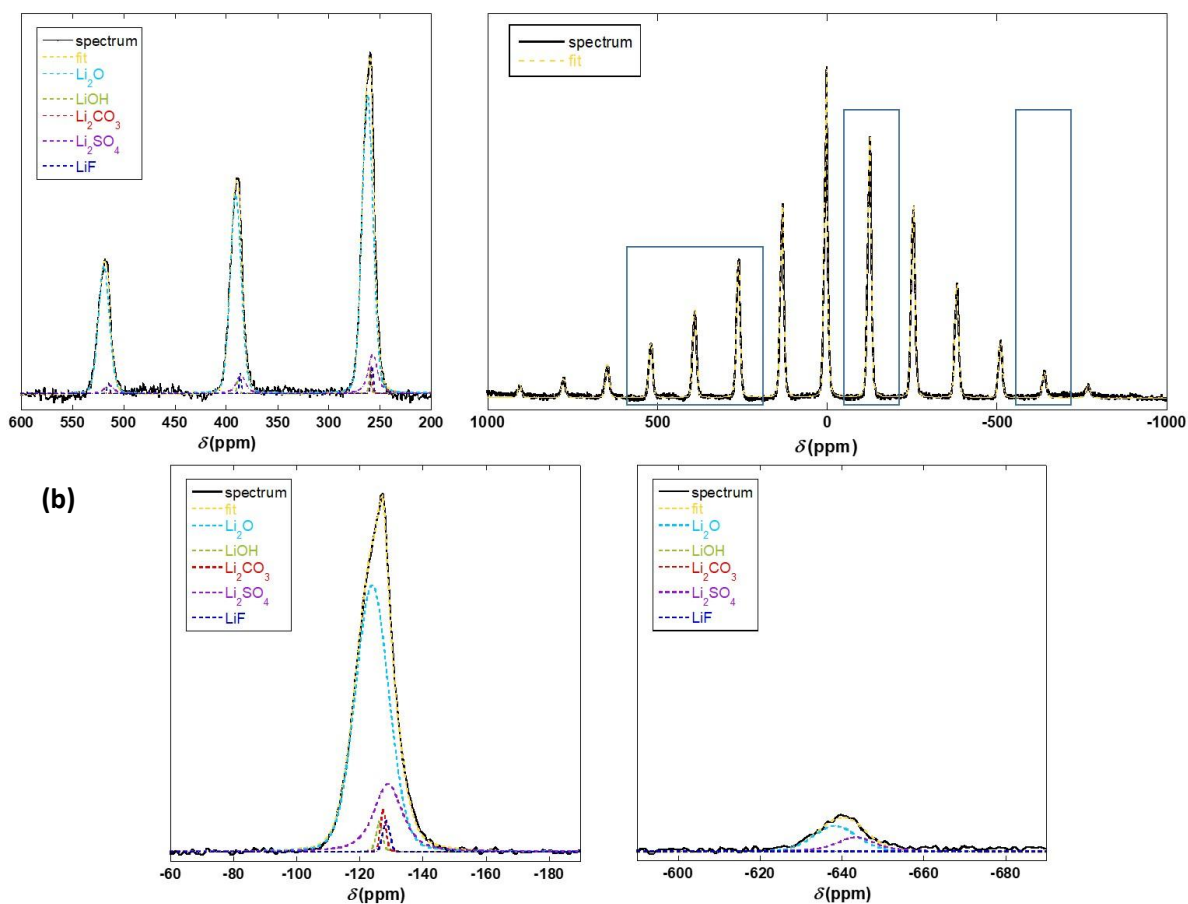


Figure S1 : Deconvolution of ^7Li MAS NMR spectra of NMC811 pristine powder (a) and dried slurry (b). Complete spectra are shown with the simulation obtained from the fitting process. Regions in blue rectangles are enlarged as examples.