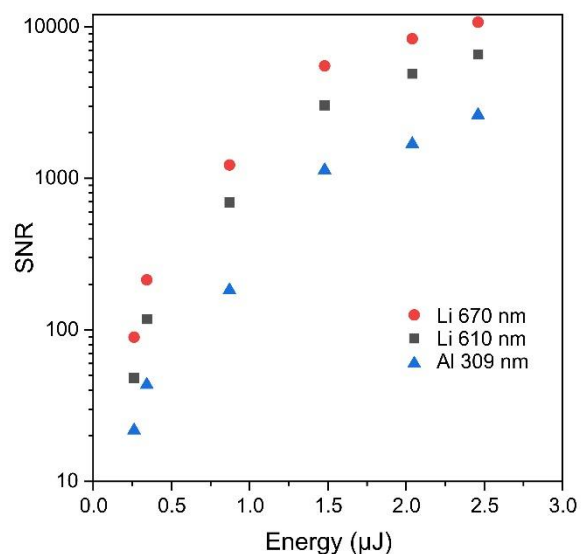
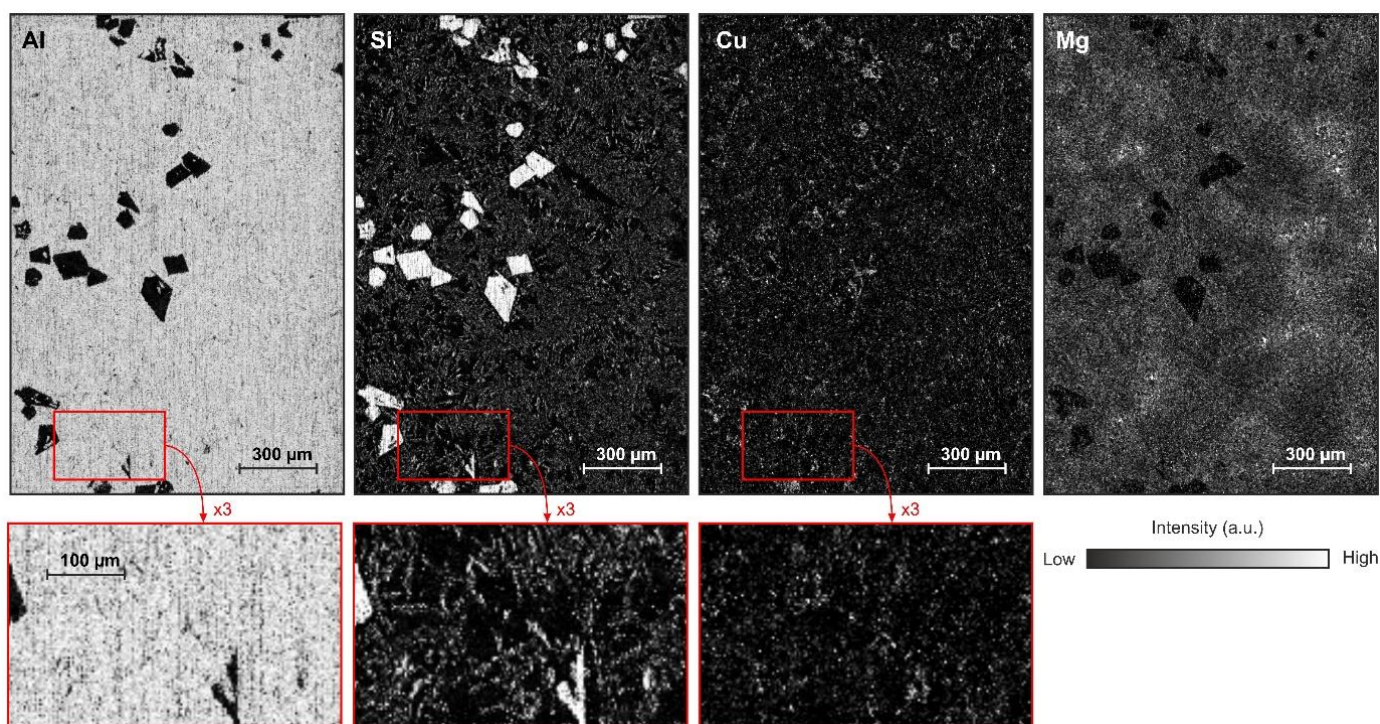


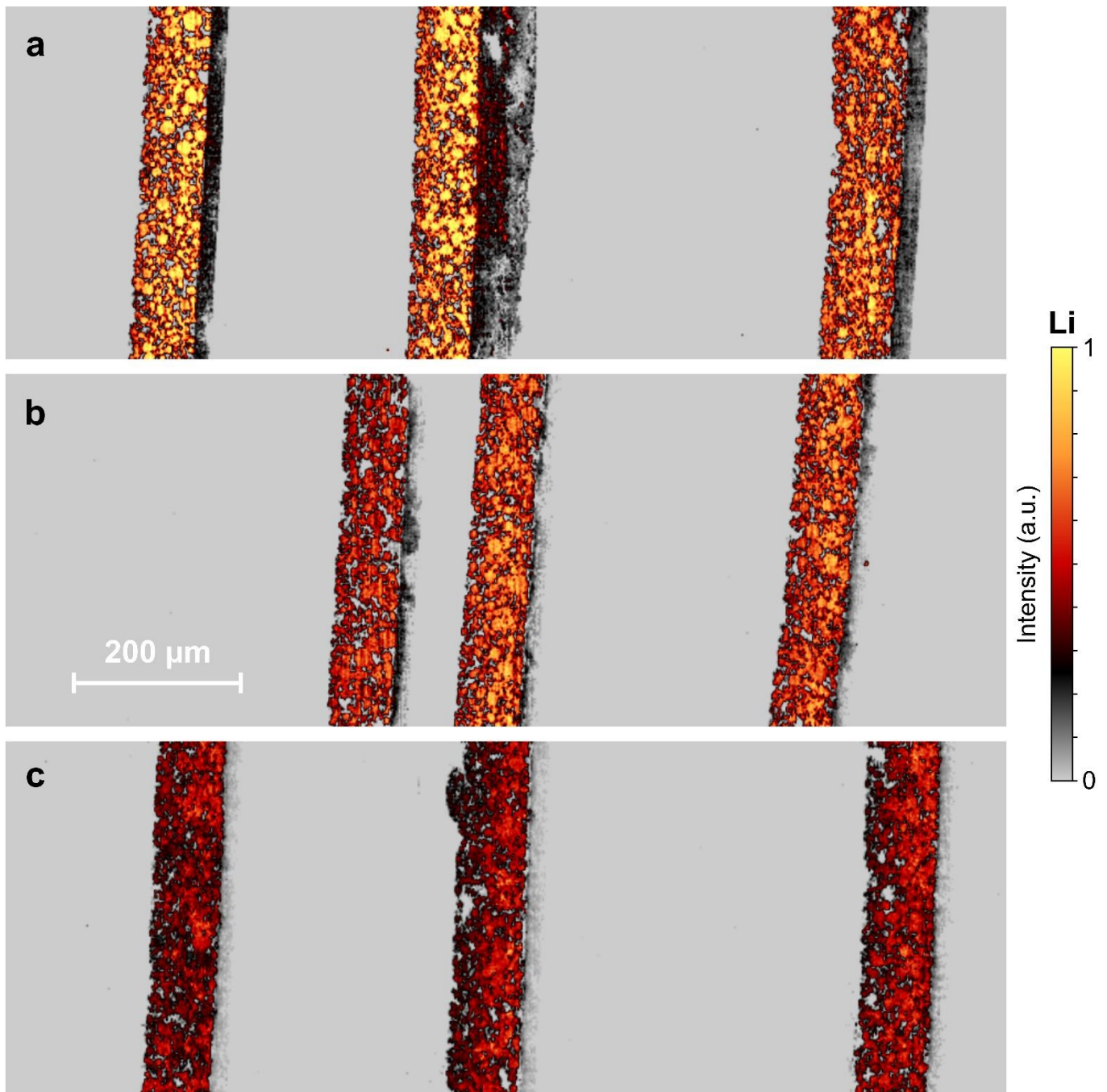
Supplementary Materials



Supplementary figure 1: Evolution of the signal to noise ratio (SNR) along laser energy for the aluminum line 309.27 nm, lithium line 610.19nm and lithium line 670.79 nm.



Supplementary figure 2: Elemental maps with SNV normalization of aluminum certified sample with a lateral resolution of 2 μm . The chemical distribution of Al, Si, Cu and Mg is showed.



Supplementary figure 3: NMC 811 electrode repartition of lithium (670.79 nm) with SoC of (a) 0%, (b) 50% and (c) 100% with a lateral resolution of 2 μm . Adaptation of figure 7 showing the lithium distribution in the central regions.