

Supporting Information

Nanoscale chemical characterization of solid state microbattery stacks by means of Auger Spectroscopy and ion-milling cross-section preparation

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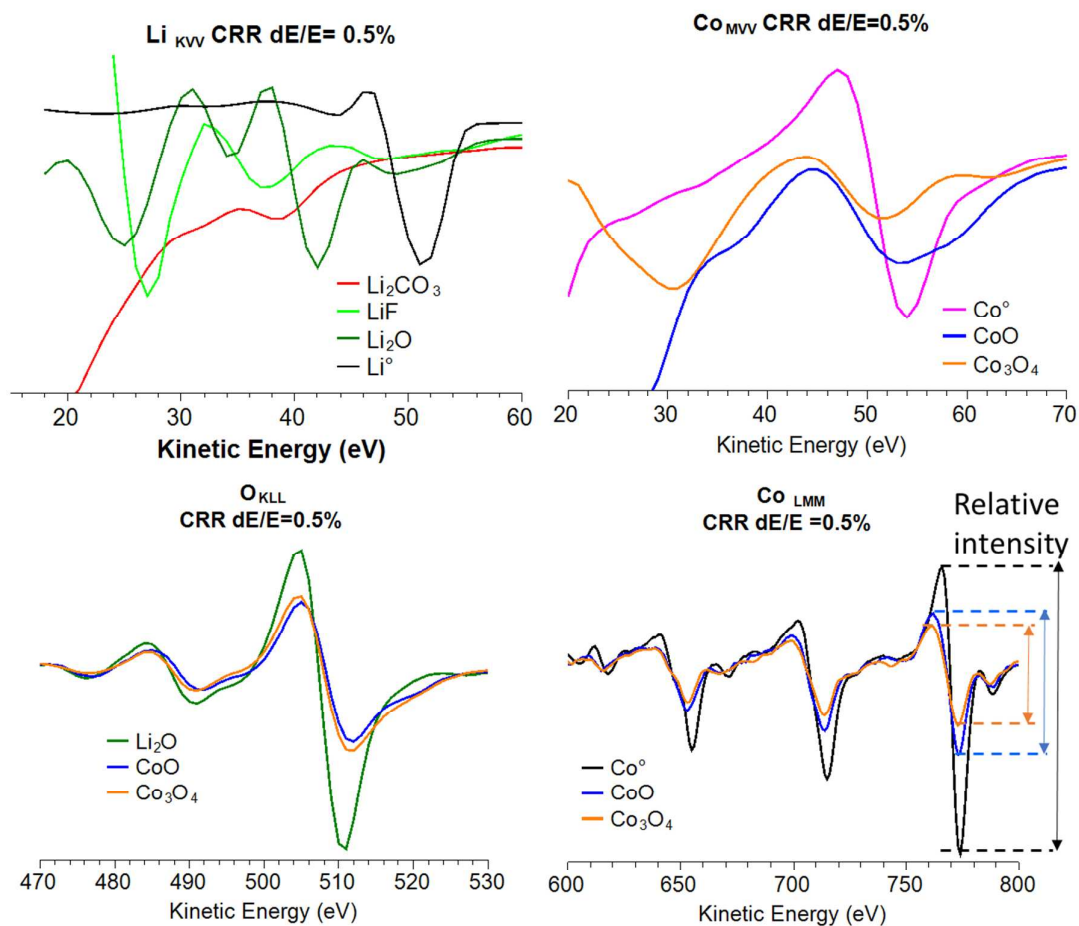


Figure S1: Reference spectra of lithium metal, Li_2O , LiF , Co metal, CoO and Co_3O_4 used in the Absolute Intensity quantification method.

S2 and S3 figures display the XPS spectra for respectively Li 1s and C 1s core peaks.

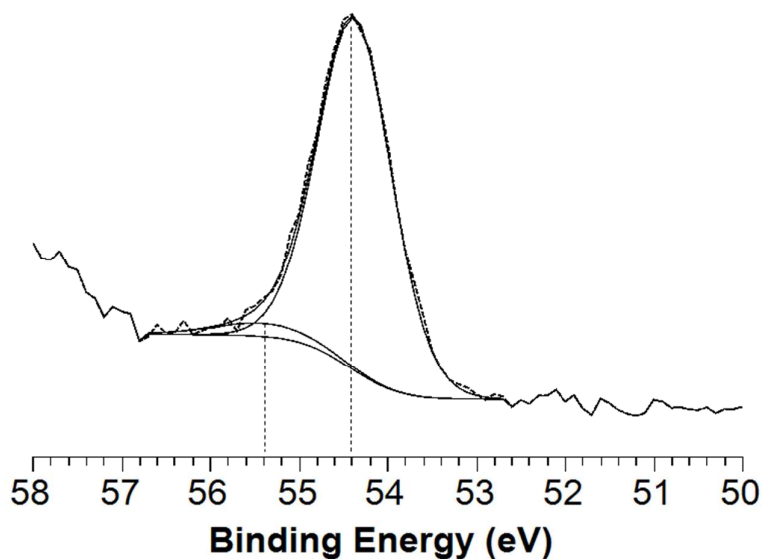


Figure S2: additional Li 1s XPS spectrum of as-deposited LiCoO₂ sample

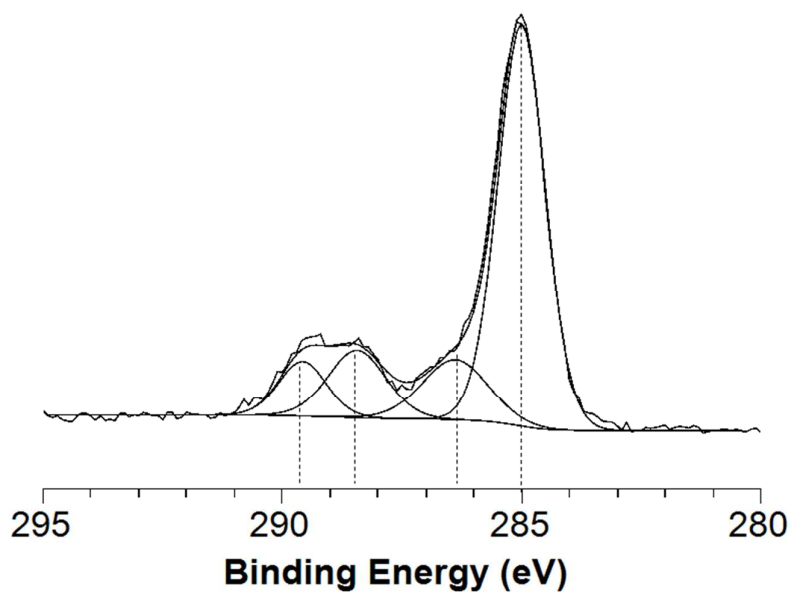


Figure S3: additional C 1s XPS spectrum of as-deposited LiCoO₂ sample, component assignments: C-C/C-H at 285.0 eV (% at. =12.2), C-O at 286.4 eV (% at. =2.6), C-O₂ at 288.4 eV (% at. =1.9) and C-O₃ at 289.5 eV (% at. =1.0)

Comments concerning S2 and S3 figures:

A few amount of lithium carbonates ($\sim 6\%$), due to the elaboration process, have been observed in XPS. Indeed, the C1s spectrum exhibits a low intensity component ($\sim 1\%$) located around 289.5 eV that can be attributed to CO_3 species. 2 % of lithium type Li_2CO_3 could then be used to fit the Li 1s spectrum. The corresponding component is located around 55.5 eV.

The Li 1s peak attributed to Li_2CO_3 has a low intensity and could reflects the Li1s peak asymmetry towards high BE and it is related to the C 1s component located at 289.5 eV. Note that the decomposition of the Li 1s spectrum is obviously not unique.