

# Supporting Information for Evidence of a thermal diffusivity gap in sintered Li-Co-Sb-O solid solutions

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## X-ray diffraction

Figure S1 shows the raw diffractograms obtained for 1100 °C, 1150 °C, 1200 °C and 1250 °C. At each sintering temperature all diffractograms for  $0 \leq x \leq 0.7$  are plotted.

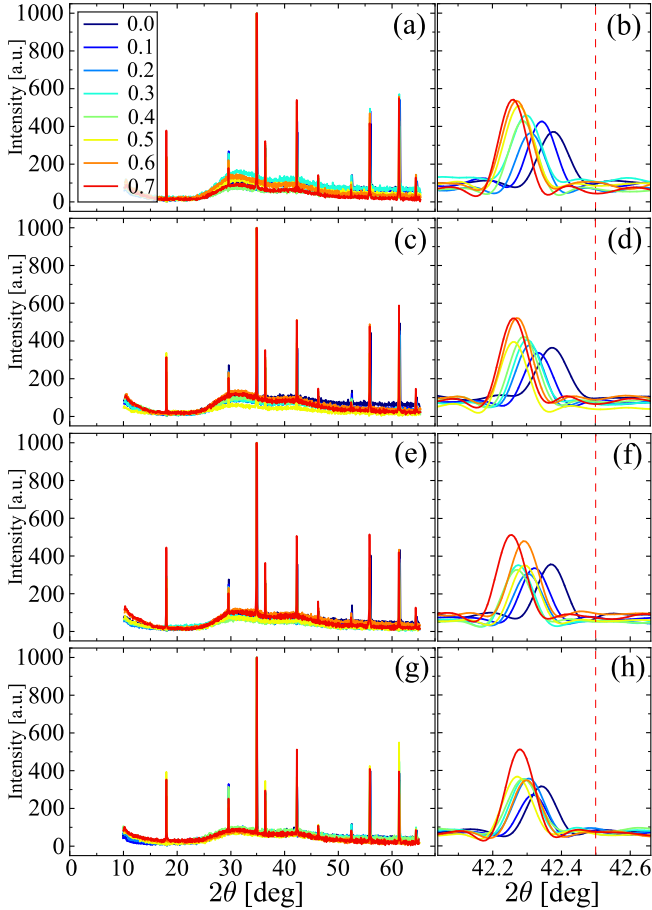


Figure S1: Diffractograms for (a) 1100 °C, (c) 1150 °C, (e) 1200 °C and (g) 1250 °C sintering temperatures. (b), (d), (f) and (h) show the corresponding zoomed regions around the cobalt spinel (vertical red dashed line).

Additionally, Figs. S1b,d,f,h show the corresponding zoomed regions around the cobalt spinel at  $2\theta = 42.5^\circ$  (indicated by a vertical red dashed line).

## Scanning Electron Microscopy

Figure S2 show collections of SEM images for 1100 °C, 1150 °C, 1200 °C and 1250 °C. Exemplary images for  $0 \leq x \leq 0.7$  are shown at each sintering temperature. SEM micrographs show that as the sintering temperature is increased,

the grain size increases accordingly. This complements the discussion in subsection "Structural characterization" of the main text.

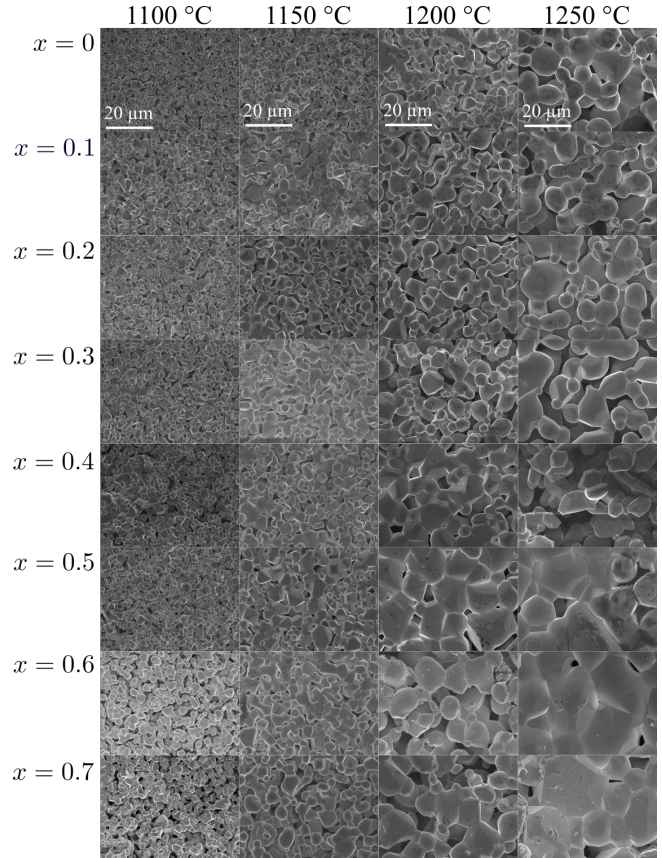


Figure S2: SEM images for  $0 \leq x \leq 0.7$  at 1100 °C, 1150 °C, 1200 °C and 1250 °C sintering temperatures.

## Li-Co-Sb-O Samples

Figure S3 shows a diagram of the procedure followed for the preparation of the Li-Co-Sb-O samples. Also, optical images of the elaborated samples are presented. It is clear that because of their black color, no further preparation is required for measurement in the front-face flash method (F3M) setup.

## Temperature dependence

Figure S4 shows the results discussed in the main text for the unit cell volume  $V_{cell}$  are presented as a function of the sintering temperature. The effect of the sintering temperature is

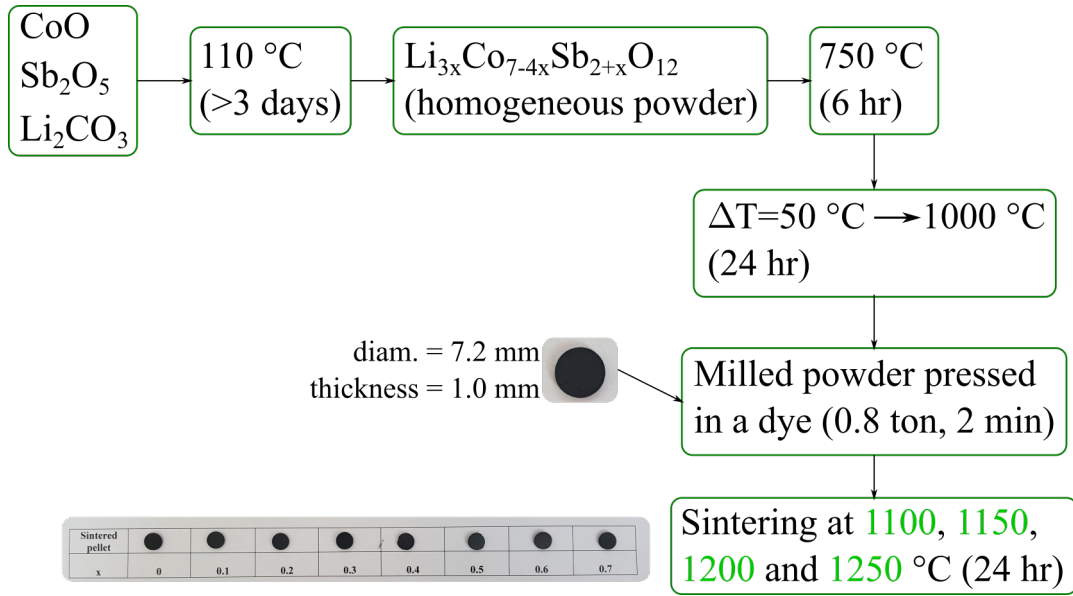


Figure S3: Elaboration workflow of the Li-Co-Sb-O solid solutions and optical images of the elaborated samples.

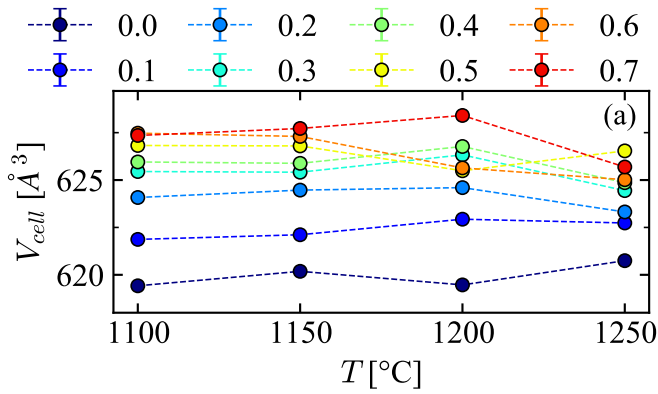


Figure S4: Unit cell volume  $V_{cell}$  for  $0 \leq x \leq 0.7$  as a function of sintering temperature.

smaller compared with the  $x$  value. For low  $x$ , the unit cell volume is practically independent of the sintering temperature.