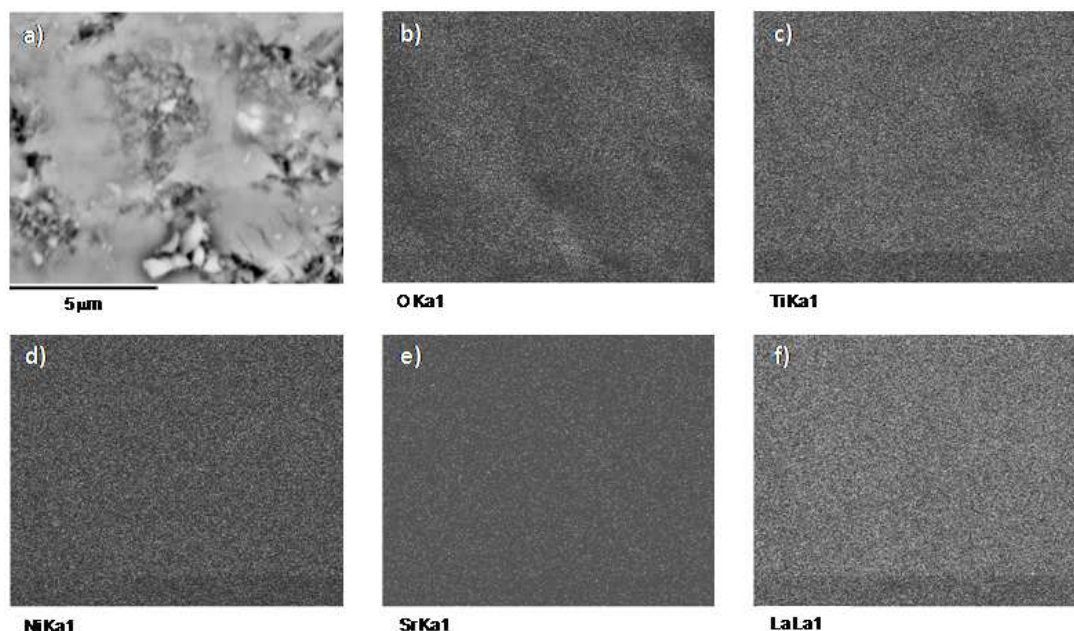


# Synthesis, Structures and Electrical Transport Properties of the $\text{La}_{2-x}\text{Sr}_x\text{NiTiO}_{6-\delta}$ ( $0 \leq x \leq 0.5$ ) Double Perovskite Series

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Supporting information

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15 **Fig. 1:** (a) Back-scattered electrons (BSE) image taken at a magnification of x10000 and element-distribution maps of a polished  $\text{La}_{1.5}\text{Sr}_{0.5}\text{NiTiO}_{6-\delta}$  pellet sample: (b) O, (c) Ti, (d) Ni, (e) Sr and (f) La.

**Table 1:** Cation composition for  $\text{La}_{2-x}\text{Sr}_x\text{NiTiO}_{6-\delta}$  series obtained from EDS.

	$\text{La}_2\text{NiTiO}_6$	$\text{La}_{1.85}\text{Sr}_{0.15}\text{NiTiO}_{6-\delta}$	$\text{La}_{1.80}\text{Sr}_{0.20}\text{NiTiO}_{6-\delta}$	$\text{La}_{1.75}\text{Sr}_{0.25}\text{NiTiO}_{6-\delta}$	$\text{La}_{1.50}\text{Sr}_{0.50}\text{NiTiO}_{6-\delta}$
<b>La</b>	2	1.83(1)	1.80(4)	1.73(2)	1.54(9)
<b>Sr</b>	0	0.17(1)	0.20(4)	0.27(2)	0.46(9)
<b>Ni</b>	0.86(2)	0.98(6)	0.97(1)	0.95(5)	1.0(1)
<b>Ti</b>	1.09(1)	1.06(6)	1.07(5)	1.05(4)	1.07(5)

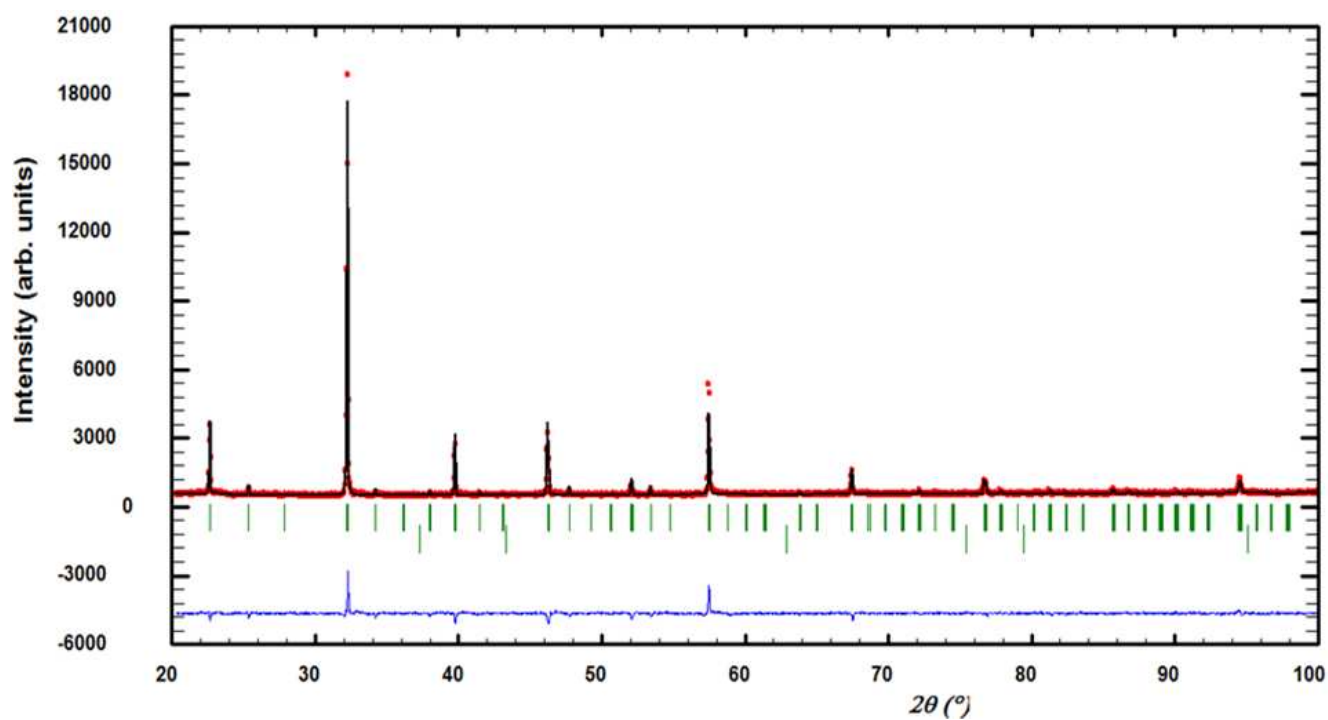


Fig. 2: Experimental (red circles) and calculated (black continuous line) XRD patterns (and their difference, blue line at the bottom) for  $\text{La}_2\text{NiTiO}_6$  assuming S. G.  $P2_1/n$ . The intensities of Bragg peaks corresponding to NiO (second row of vertical green bars) are negligible.

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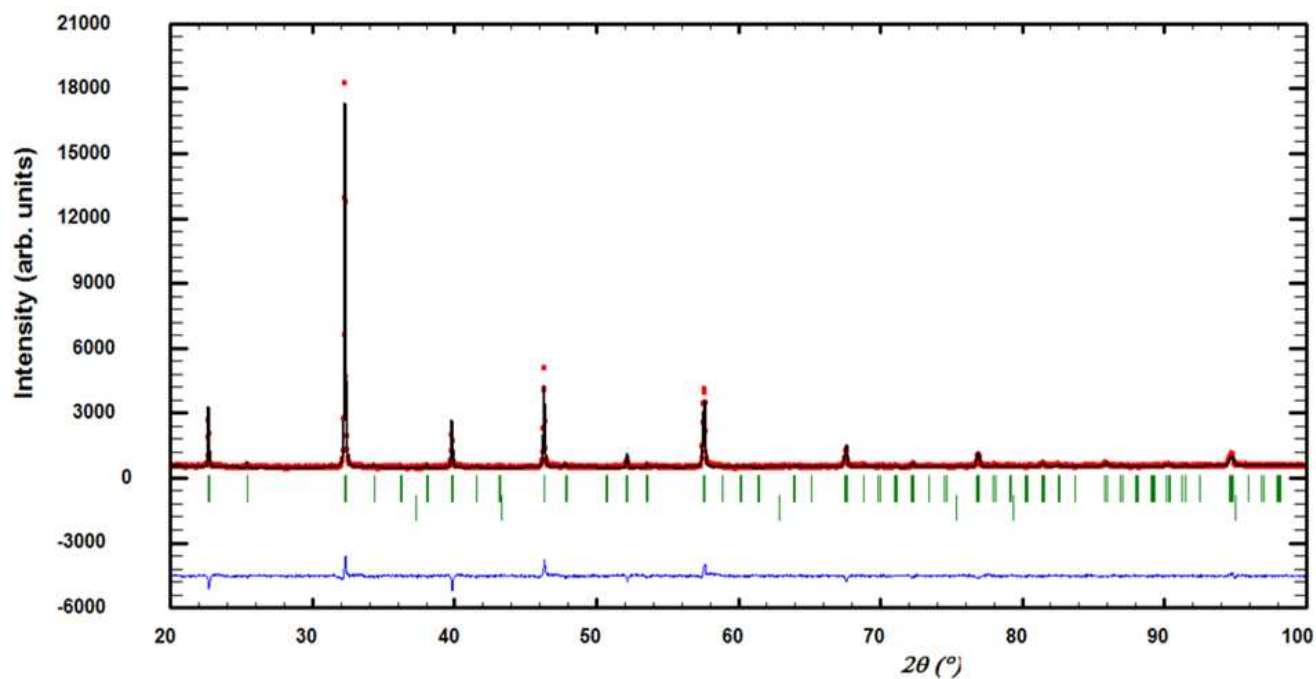


Fig. 3: Experimental (circles), calculated (continuous line) and their difference (continuous line at the bottom) XRD patterns of  $\text{La}_{1.75}\text{Sr}_{0.25}\text{NiTiO}_{6.8}$  in Pnma, the intensities of Bragg peaks corresponding to NiO (second row of vertical bars) are negligible.

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