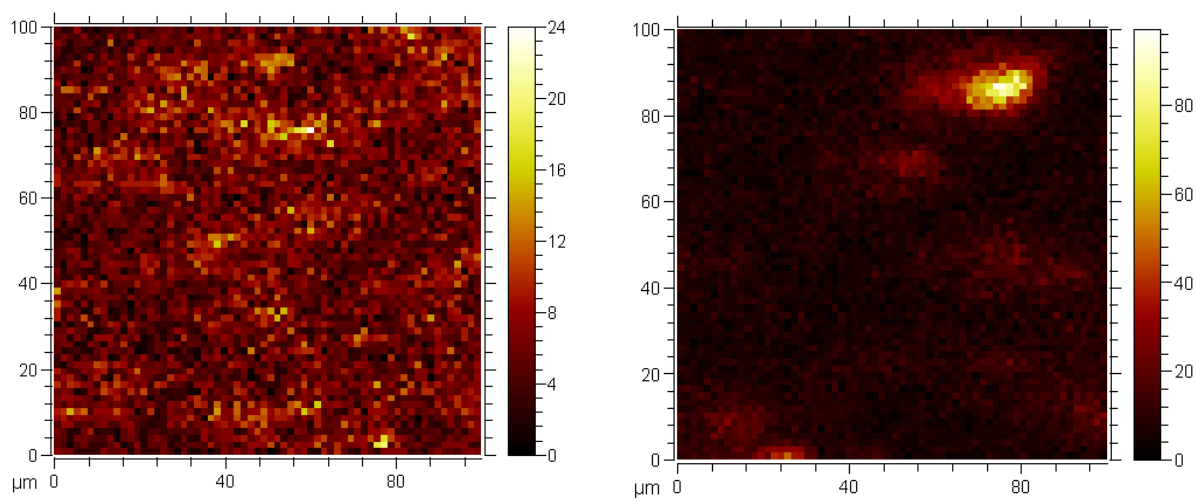
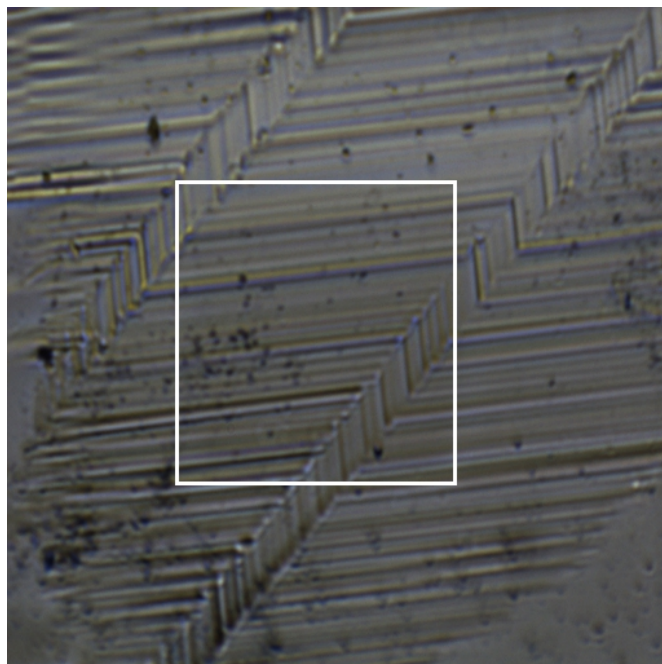


## Electronic Annex



**Figure A1** Summation of all scans of sample Pv\_Pb\_26n (left) and Pv\_Pb\_29 (right). Images are 64 x 64 pixel corresponding to an area of 100 x 100  $\mu\text{m}$ . Scale bar is the integrated Pb-signal intensity in counts per second.



**Figure A2** Reflected light image of sample Pv\_Pb\_25 after TOF-SIMS measurement. Field of view is 300 x 300  $\mu\text{m}$ . The white frame represents the sputtered area of 100 x 100  $\mu\text{m}$ . Clearly visible are the twin domains.

**Table A3** EDX\* analysis of the crystal substrate.

	natural prv	synthetic prv
TiO <sub>2</sub>	61.26 (5)	60.55 (33)
CaO	38.74 (5)	39.45(33)
Total	100.0	100.0

prv = perovskite; \*Energy dispersive analysis with ZAF correction on a Jeol JSM 6510 (20 kV acceleration voltage). The company who provided the synthetic prv claims a purity of 99.995 %.