## **Supporting information**

The chalcogenide perovskite BaZrS<sub>3</sub>: Thin film growth by sputtering and rapid thermal processing

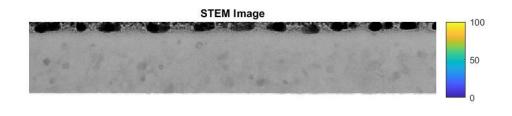
Corrado Comparotto\*, Alexandra Davydova, Tove Ericson, Lars Riekehr, Marcos V. Moro,

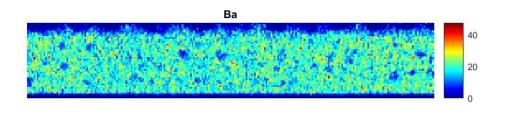
Tomas Kubart, Jonathan Scragg

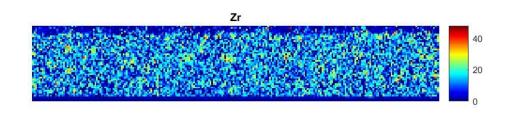
Ångström Solar Centre, Solid State Electronics

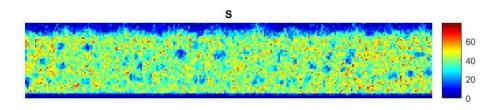
\*E-mail: corrado.comparotto@angstrom.uu.se

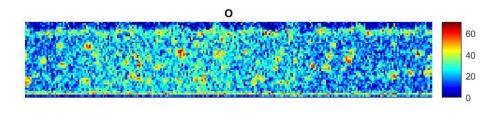
Herein additional STEM bright field images and EDS maps of Ba, Zr, S, O, Si, Au, Pt, Pd, and F are reported. They were measured at 100°, 120°, and 180° on a compositionally graded sample annealed at 900°C. The EDS maps were recorded on the same area where STEM was performed.

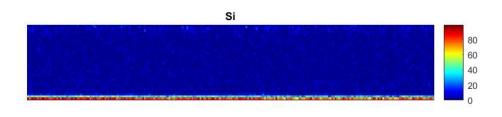


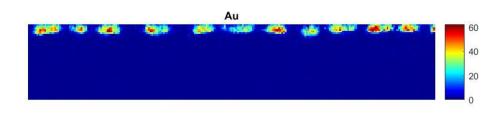


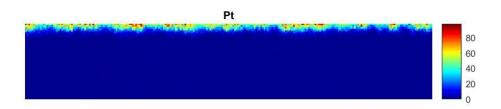


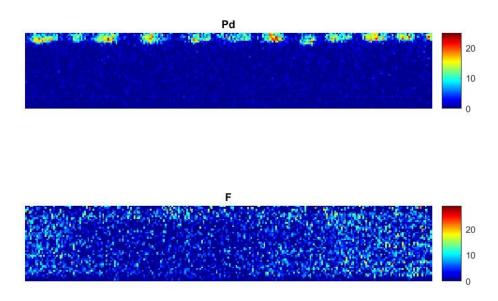




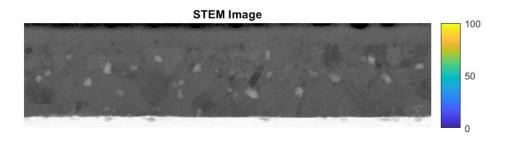


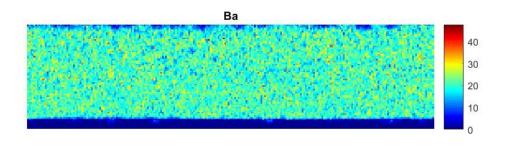


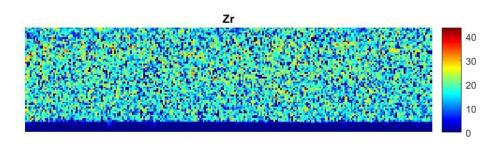


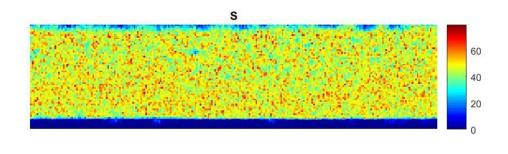


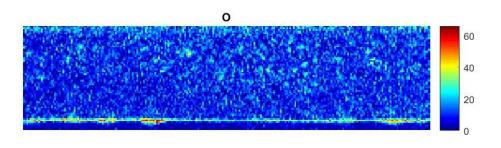
**Figure S1**. STEM bright field image measured at 100° on a compositionally graded sample annealed at 900°C; EDS maps of different elements recorded on the same area where STEM was performed.

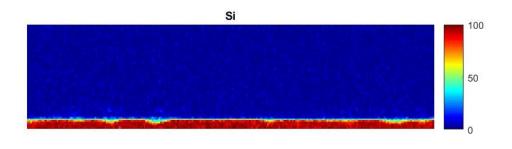


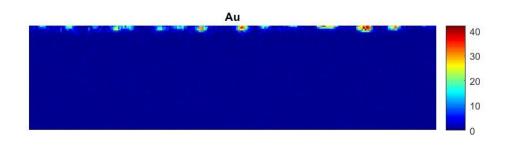


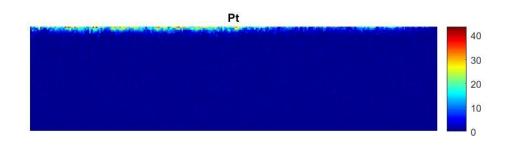


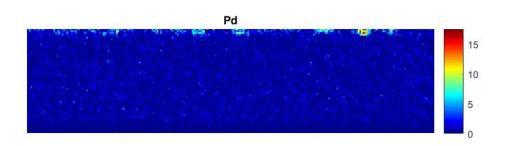


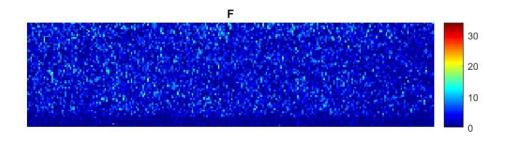




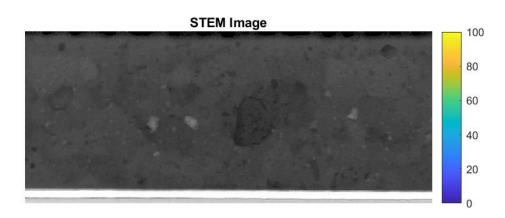


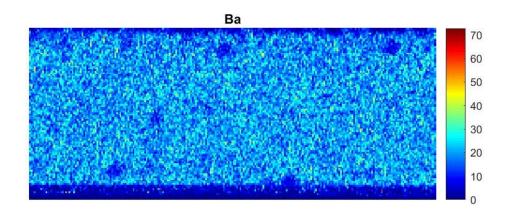


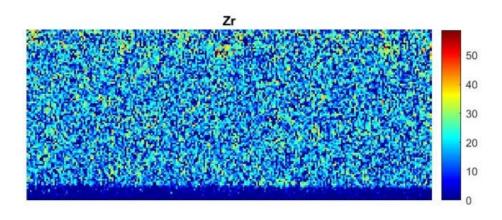


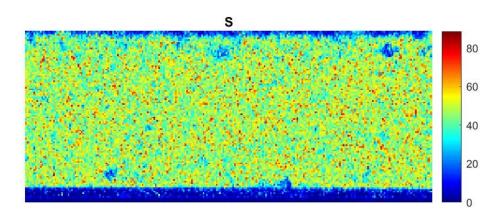


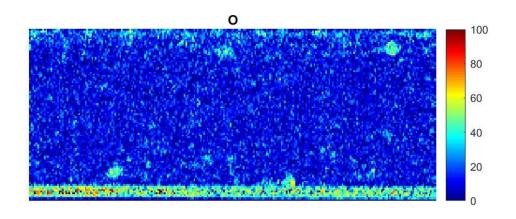
**Figure S2**. STEM bright field image measured at 120° on a compositionally graded sample annealed at 900°C; EDS maps of different elements recorded on the same area where STEM was performed.

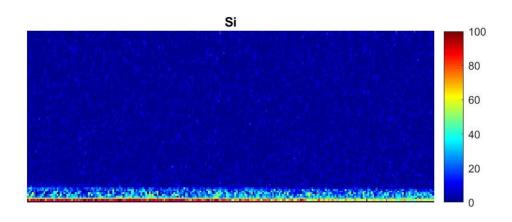


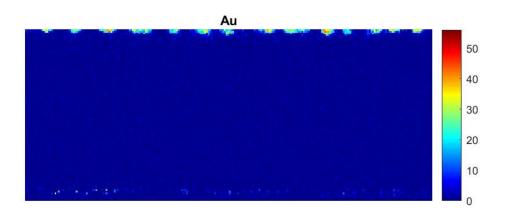


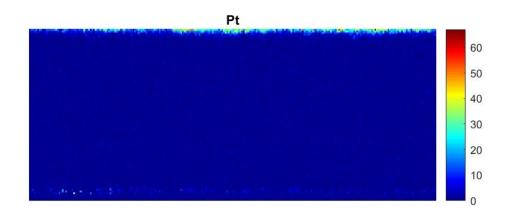


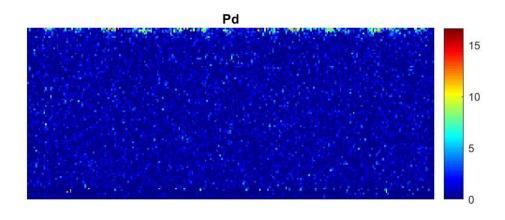


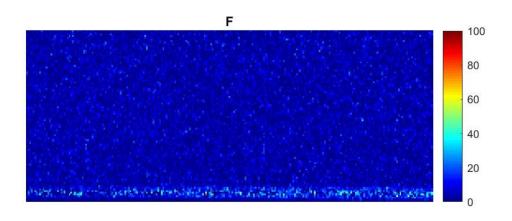












**Figure S3**. STEM bright field image measured at 180° on a compositionally graded sample annealed at 900°C; EDS maps of different elements recorded on the same where STEM was performed.