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**Supporting information for article:**

# The Implications of X-ray beam profiles on Qualitative and Quantitative Synchrotron Micro-Focus X-ray Fluorescence Microscopy

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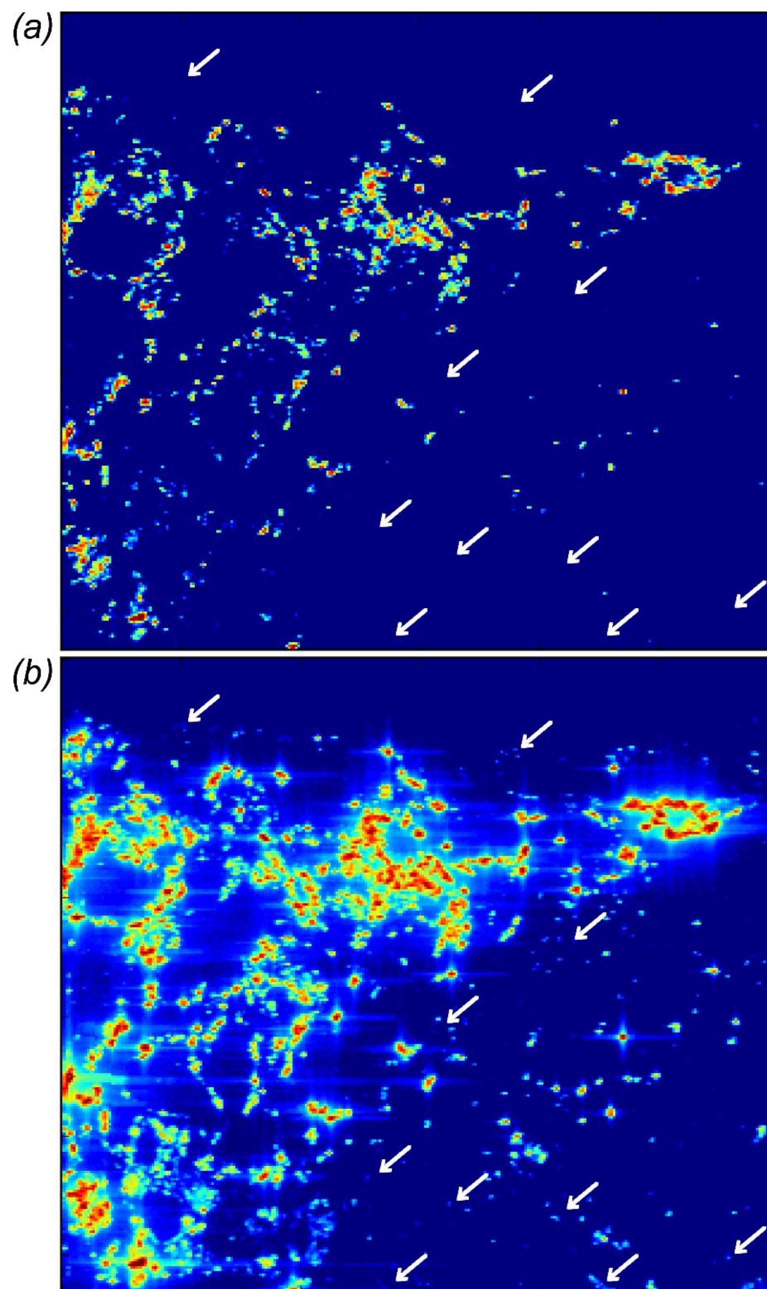


**Figure S1** A large thresholding value is needed as the artefacts surrounding high concentration particles have a large magnitude. Image **a** is a result of the map after minimum thresholding, arrows are used to indicate some of the low concentration features which are lost during the thresholding procedure. As these areas are a substantial distance away from any high concentration particles, they are not artefacts.

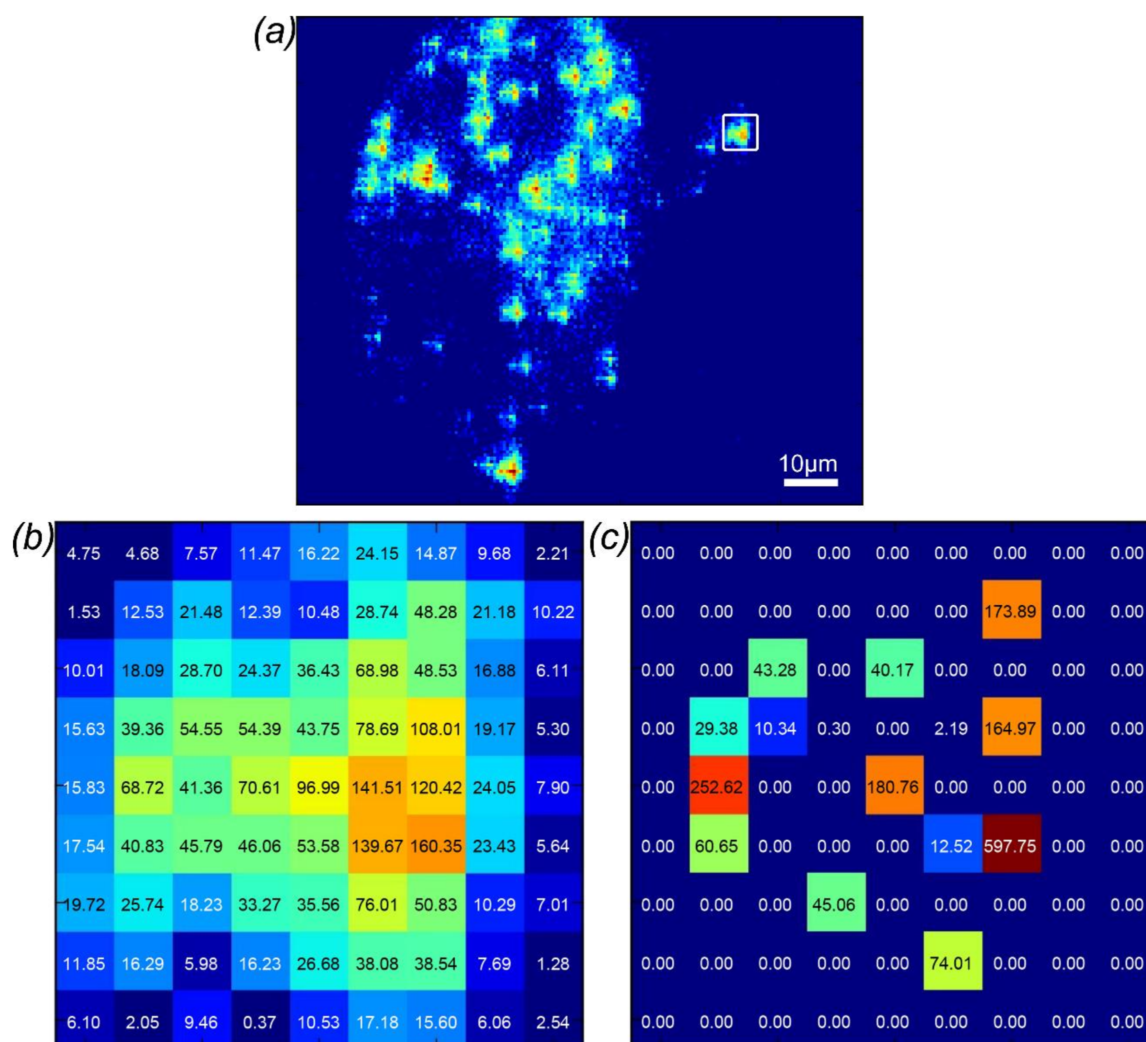


**Figure S2** **a.** Original Ti XRF map highlighting regions shown in b and c (white box). **b.** Before the beam profile correction. **c.** After the beam profile correction.

**Table S1** Table listing the scaling factors used to calculate the beam contribution in the quadrants.

| Letter | *a* | *b* | *c* | *d* | *e* | *f* | *g* |
|---|---|---|---|---|---|---|---|
| Scaling Factor | 0.532 | 0.468 | 0.768 | 0.232 | 0.128 | 0.872 | 0.840 |

| Letter | *h* | *i* | *j* | *k* | *l* | *m* |
|---|---|---|---|---|---|---|
| Scaling Factor | 0.160 | 0.352 | 0.648 | 0.876 | 0.520 | 0.796 |

The code for both correction methods are available on GitHub:

1. Beam profile correction (https://github.com/morrella/Beam_Profile_Correction_XRF)
2. Adaptive subtraction correction (https://github.com/morrella/Adaptive_Subtraction_XRF)