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Quantitative microscopic studies with high spatial resolution: the virtue of cross-calibration

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Trace elements quantification is normally a difficult task in micro X-ray fluorescence analysis (microXRF), also inevitable in high flux synchrotron-based microXRF (SR-microXRF). However the high spatial resolution and high throughput of SR-microXRF are the advantages among chemical analysis techniques. In this work, we combined it with laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS), which provided quantitative output on trace elements, but in less spatial resolution. Both techniques show 2D chemical images in agreement. Therefore, we used quantitative information from LA-ICPMS to calibrate the SR-microXRF analysis, resulting in a quantitative 2D image with high spatial resolution.

[1] Wang, H. A. O.; Grolimund, D.; Van Loon, L. R.; Barmettler, K.; Borca, C. N.; Aeschlimann, B.; Günther, D. *Anal. Chem.* 2011, accepted.

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Advancing quantitative chemical imaging

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Talk

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