

Supplementary Information

In-situ X-ray Absorption Spectroscopy and Droplet-Based Microfluidics: An Analysis of Calcium Carbonate Precipitation

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Figure S2: Cross-sectional measurement of Si and Ca XRF, with corresponding XRF spectra at three positions along the line scan.

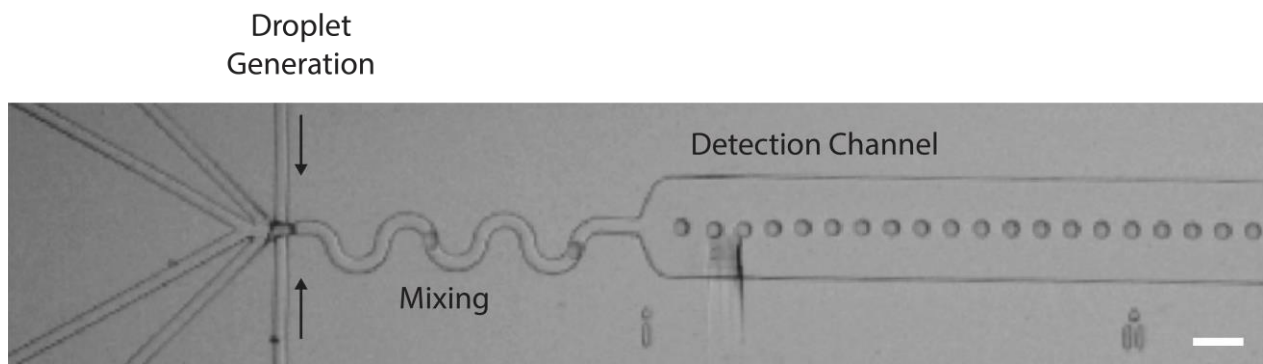


Figure S1. Brightfield image of the microfluidic channel taken when inside the measurement chamber and after one scan. Exposure to X-rays results in a visible imprint on the PDMS surface, which appears off-centered due to a parallax from the 45° angle of the incident beam. The shape of the channel is not affected, and the stability of the droplets is not compromised. The scale bar is $100\ \mu\text{m}$.

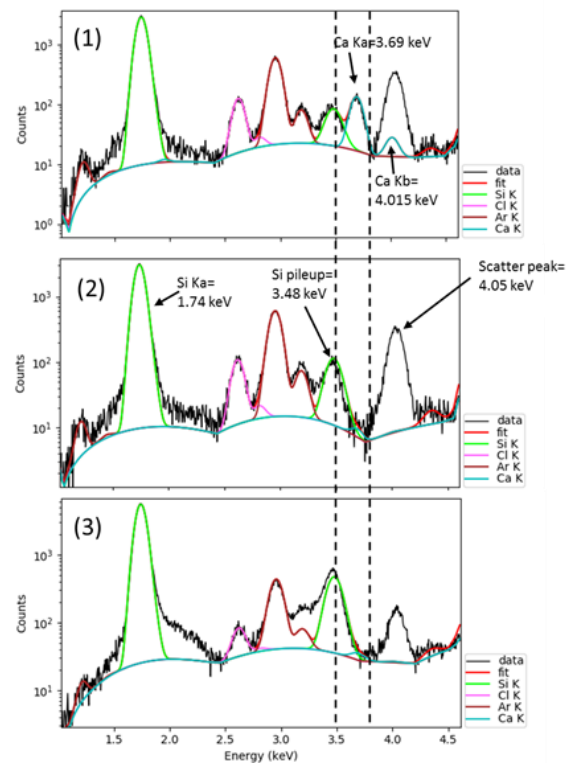
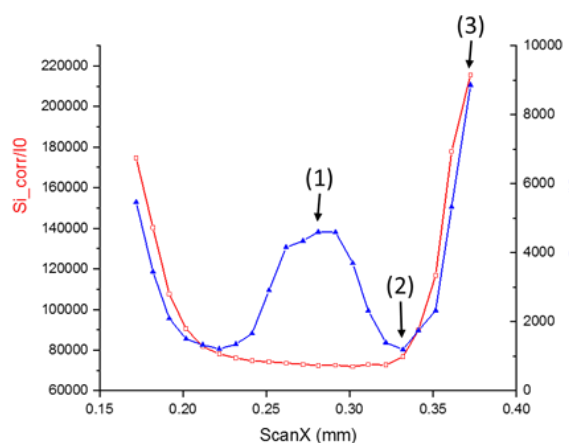


Figure S2. Cross-sectional measurement of Si and Ca XRF (perpendicular to the microchannel axis) with droplets containing 20 mM Ca^{2+} . The panels on the right show XRF spectra corresponding to three positions along the line scan: position (1) - centered on the droplet stream, position (2) - at the bottom of the channel next to the droplet stream, and position (3) - on the channel wall. The dotted lines highlight the Ca region of interest (ROI) used during the measurements. At position (3), the Si pile-up peak overlaps with the Ca K- α line within the ROI, which explains why the Ca signal is also seen to increase along the channel walls on the cross-sectional scan.