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High throughput mail-in operations for soft x-ray analysis of soils

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The speciation of C and N in soils using x-ray absorption spectroscopy is an important capability for soil research as it requires minimal sample pre-treatment and provides improved characterization of mineral associated organic material. One of the main limitations of the technique is the low throughput associated with limited synchrotron access, difficult sample transfer processes and the long data acquisition times that are typically necessary for high quality measurements. To address these issues, a high throughput mail-in service has been developed for the SGM Beamline at the Canadian Light Source. Standardization of the sample preparation and sample on-boarding processes have facilitated the measurement of large numbers of soils with minimal supervision from beamline staff. Several improvements in automation have greatly improved efficiency. Data access through the beamline website allows for remote access and on-line data reduction. This mail-in service is now available through the standard proposal submission system at the CLS and is provided at a nominal cost to users.

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