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Spectroscopy capabilities in the VUV - Soft X-ray region at the Canadian Light Source, the Variable Line Spacing-Plane Grating Monochromator beamline

Wednesday, 15 November 2023 18:45 (15 minutes)

The VLS-PGM beamline at the Canadian Light Source (CLS) is one of the few beamlines in the Americas that is built to optimize the delivered flux below 250eV, and it is capable of performing X-ray absorption spectroscopy (XAS) at Lithium (Li) and Boron (B) K-edges, and Sulfur (S), Phosphorus (P), Silicon (Si) and Aluminium (Al) L-edges with two dedicated endstations and a suite of detectors.
Improvement to the X-ray absorption near edge structure (XANES) measurements over the B K-edge, and S and P L-edges, have been achieved by the use of a recently commissioned silicon drift detector (SDD) for partial fluorescence yield (PLY); a multichannel plate detector (MCP) for total fluorescence yield (FLY) and total electron yield (TEY) are routinely used over the full beamline energy range.
This combination is well suited for a number of CLS strategically important scientific disciplines, being B, S and P some of the essential elements in agriculture, agri-food, and environmental science research.
The capabilities of the beamline, with relevant examples, are highlighted in the talk.

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