VerSoX: Near-ambient pressure XPS/NEXAFS at Diamond Light Source

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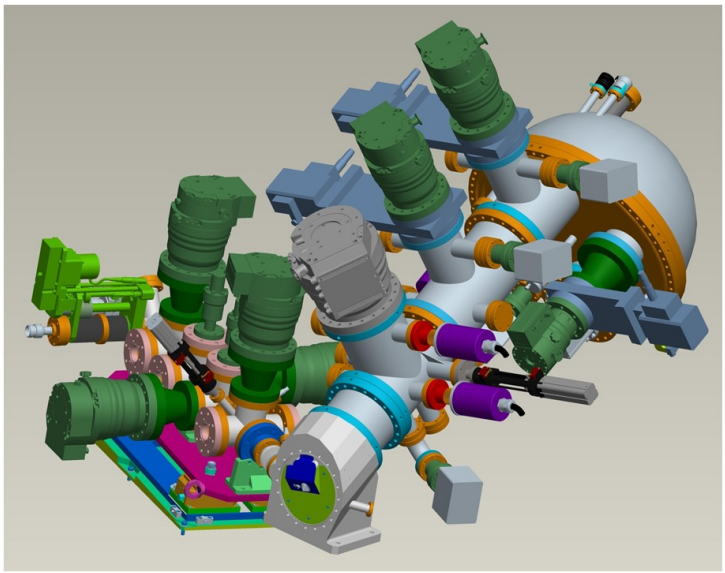
The near-ambient-pressure beamline B07 (Versatile Soft X-ray beamline) opened for users in July 2017 at Diamond Light Source. The beamline features a design, where beamline and electron analyser meet in the same flange (see Figure); thus experimental chambers and reaction cells can be exchanged relatively easily. The energy range 250 – 2800 eV allows accessing a wide range of core levels and is optimised for the kinetic energy range necessary to penetrate gas phases in the 10 mbar range. The differentially pumped beamline entrance and analyser enable measurements routinely up to 30 mbar. The talk will discuss the beamline design and performance and present some of the first results of experiments studying model catalysts and electronic devices in ambient-pressure conditions. The experimental results include absorption spectra at the C and S K edges, thus demonstrating the performance at both ends of the photon energy spectrum.



Schematic drawing of the VerSoX endstation showing the differentially pumped beamline entrance (left), the analyser (right) and the interface flange (center), where both analyser and beamline meet.