Recent and Future Developments at the Soft X-ray Spectroscopy Beamline ID32

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ID32 was a phase 1 upgrade beamline with a scientific focus on magnetism and electronic structure using soft X-ray spectroscopy [1]. It started operation at the end of 2014 on the XMCD (X-ray magnetic circular dichroism) branch and on the RIXS (resonant inelastic X-ray scattering) branch in mid-2015.

The XMCD branch offers sophisticated sample preparation facilities attached to a UHV 9T superconducting fast sweeping (up to 8T/minute) magnet [2]. There is also a 4T perpendicular field, which allows XMLD (X-ray magnetic linear dichroism) experiments to be carried out - figure 1a.

The RIXS branch has very high energy resolution (~30meV at 930 eV), a 4-circle goniometer and a continuously variable scattering arm (50-150 degrees) under UHV vacuum - figure 1b. There is also the possibility of measuring the polarisation of the scattered X-rays [2].

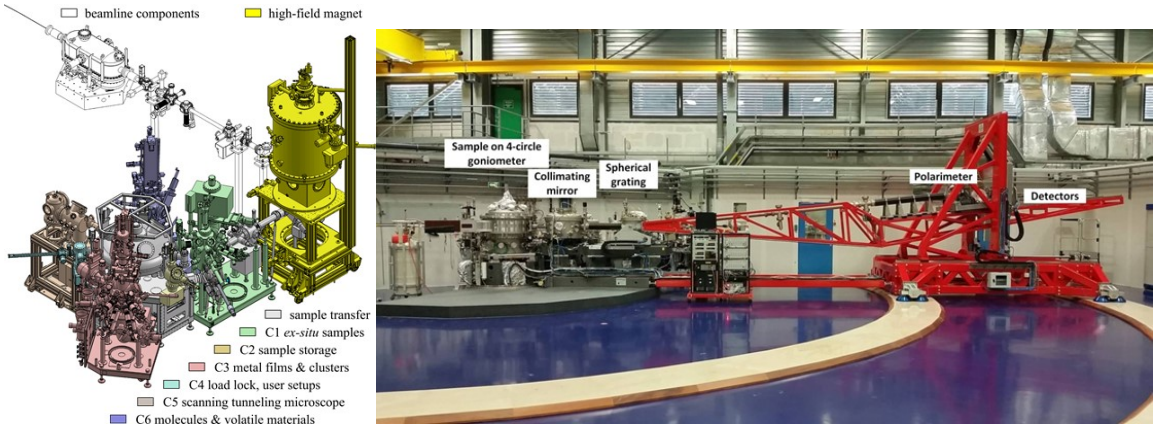

Figure 1: a. The left hand panel shows the XMCD experimental area with the 9T magnet.
b. The Right hand panel shows the RIXS end-station and scattering arm.

Recent results illustrating some of the new capabilities of the beamline will be presented. In addition, the improvements planned during the EBS shutdown will be described.

References

[1] - N. B. Brookes et al. NIM A **903**, 175 (2018).
[2] - K. Kummer et al. J. Synch. Rad. **23**, 464 (2016).