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Recent Developments in the Soft X-ray RIXS Programme at the ESRF

Wednesday 28 August 2024 18:00 (15 minutes)

During the last 5 years the RIXS instrumentation at the ESRF soft X-ray beamline ID32 has undergone a major upgrade which greatly improved the resolution and the through-put of the instrument compared to its first period of operation from summer 2015 to the ESRF-EBS shutdown. This upgrade included the replacement of refocusing optics, spectrometer gratings and also the installation of new undulator sources. At the same time, the arsenal of sample environments available to users has also been continuously developed. In addition to the standard cryogenic sample environment we can now also offer setups for uniaxial strain, high temperatures or electric and magnetic fields to users. In this talk, we will present technical aspects of the various upgrades and sample environments for the high resolution RIXS spectrometer together with commissioning results and examples from user experiments.

In early 2024, the high-resolution RIXS program at ID32 was complemented with a compact, high through-put RIXS spectrometer that is operated at the XMCD branch of the beamline and has seen first user experiments in February and March 2024. This spectrometer is mobile and can be attached to several end-stations: the ID32 high-field magnet for RIXS measurements in fields up to 9T and down to 4K, a compact material science end-station for materials research, and in the future a pulsed field magnet granting access to fields of 50+ Tesla. In the second part of this talk, we will discuss the design of this spectrometer and show commissioning results as well as some first scientific examples of RIXS measurements in high-magnetic fields.

I plan to submit also conference proceedings

No

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