

Beamline I21 – Resonant Inelastic X-ray Scattering (RIXS) at Diamond Light

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Resonant inelastic soft X-ray scattering (RIXS) [1, 2] is a powerful bulk-sensitive photon-in / photon-out spectroscopic and scattering probe of the electronic structure of condensed matter with elemental sensitivity. It is a unique tool for studying low energy excitations in complex correlated systems, being sensitive to charge-, orbital-, spin-, and lattice-degrees of freedom [3-7]. Dedicated instrumentation for soft X-ray RIXS with ultra-high resolution in energy and momentum spaces has become available thereby enabling characterization of collective excitations such as magnons and phonons. In this presentation I will give a brief introduction of the I21-RIXS beamline which is currently under construction at Diamond Light Source in the UK. Details of the key beamline performance, the optical design and the mechanical designs are to be presented.

References

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