ID31 – A new high energy beamline for buried interface structures and materials processing

Mechanical design challenges

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UPBL2 project started in 2013 and have now its infrastructure completed. The mounting of all the equipments of the beamline will be finished in 2015. UPBL2 enables a portfolio of hard x-ray (20keV to 150keV) characterization techniques coupled with a great versatility in choosing beam sizes, energy and energy-band.

Generic Monochromatic Beam Transfocator

Multilayer Monochromator

Laue-Laue Monochromator

Experimental station

For the energy range 20keV to 70keV
Two water cooled 300mm long multilayers in horizontal scattering with gap adjustment

For the energy range 50keV to 150keV
Two Laue bent Si(111) crystals with asymmetric cut of 36° in non dispersive geometry. The two crystals are Cryo cooled

Experimental devices at ID31
- Fuel cells
- Rechargeable batteries
- Catalytic materials etc...

Examples of sample environments
- High pressure cell for solid-liquid interface studies
- High pressure for liquid-solid interface
- Temperature chamber for liquid-solid interface studies

Reflectivity mode (with Heavy-duty micro diffraction Instrument)