

Development of a New State-of-the-art Beamline Optimised for Single Crystal and Powder X-ray Diffraction under Extreme Conditions at the ESRF

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We present a new state-of-the art synchrotron beamline fully optimised for monochromatic X-ray diffraction at high pressure and high (or low) temperature. In comparison with the old high pressure beamline ID30, this new beamline exhibits outstanding performance in terms of photon flux and focusing capabilities. The main components of this new instrument will be described in detail and compared to the performance of beamline ID30. In particular, the choices in terms of X-ray source, X-ray optics, sample environment and detectors will be detailed. The first results of the beamline commissioning are presented.

Keywords: synchrotron beamline, x-ray diffraction, high pressure