

Instrumentation for micro-tomography experiments at BL20B2

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1. Introduction and explain about BL20B2
 - A) Optics hutch
Monochromator and stabilized water cooling system
 - B) Experimental hutch
Micro-imaging setup including tomography
2. Monochromator alignment check
 - A) fixed-exit, energy calibrations
 - i. changing the X-ray energy
 - ii. adjusting the mono
 - iii. measure the beam position
 - iv. measure the flux density
 - v. measure the stability by intensity and beam position
3. Micro-imaging setup
 - A) high-precision stages
 - i. check the movements of translation stage
 - B) image detector
 - i. measure the spatial resolution
 - ii. measure conversion gain
4. Basic introduction for synchrotron radiation micro-tomography
5. Micro-tomography measurement
 - A) 1min. scan (samples: woods, plastics, etc.)
 - i. Experimental hutch 1
 - ii. C9100-02(f=50mm)+BM2(f=50mm)+P43(10um-thick)
 - B) Refraction contrast (edge-enhancement) tomography
 - C) Tomographic reconstruction using GPGPU on PC
6. Data handling
 - A) Data processing with slice series
 - B) Volume rendering (Something free software)