

## Instrumentation for x-ray fluorescence (XRF) analysis experiment at BL20XU

Akihisa Takeuchi

1. Introduction and explain about BL20XU
  - A) Optics hutch
    - Light source,
    - Double-crystal monochromator with liquid-nitrogen cooling system
  - B) Experimental hutch
2. Basic introduction for synchrotron radiation XRF measurement
3. XRF analysis setup
  - A) Monochromator alignment check
    - Fixed-exit, energy calibrations
    - i. Changing x-ray energy
    - ii. Adjusting monochromator
    - iii. Measure the beam position
    - iv. Flux density measurement
  - B) High-precision stages
    - i. Check of translation stage movement
  - C) Detectors
    - i. Solid-state detector (SSD)
    - ii. Silicon drift detector
4. XRF measurement (sample: plants, ceramic, rocks, electronic device etc..)
  - A) Spectrum measurement
    - i. Check x-ray energy
    - ii. Check scattering angle
  - B) Element mapping with scanning microscope