

# High-resolution angle-resolved photoemission spectroscopy Beamline 1 (BL-1)

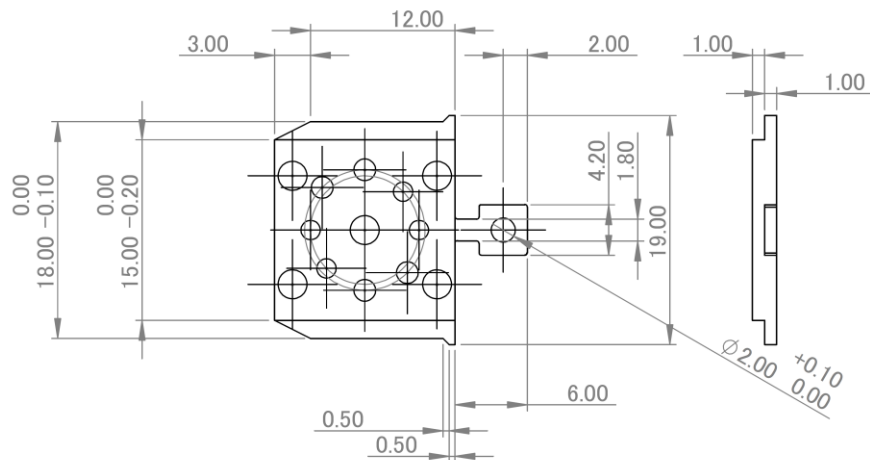


- ❑ Photon energy:  $h\nu \sim 26 \text{ eV} - 300 \text{ eV}$
- ❑ Undulator: Linear (s-, p-pol.)
- ❑ Analyzer: MBS-A1 with a deflector mode
- ❑ Total  $\Delta E$ :  $\sim 4\text{-}5 \text{ meV}$  ( $h\nu = 45, 60 \text{ eV}$ )
- ❑ Temperature: 10 K – 300 K
- ❑ Sample holder: Omicron type
- ❑ Surface treatment: Spattering, annealing etc.
- ❑ LEED/Auger is available

- ❑ 6-axis sample manipulator
  - Azimuth:  $+20 \text{ deg} \sim -120 \text{ deg}$
  - Polar:  $-8 \text{ deg} \sim +20 \text{ deg}$
  - Tilt:  $-15 \text{ deg} \sim +25 \text{ deg}$

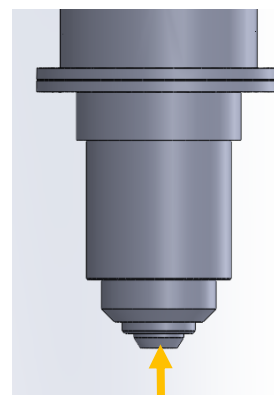
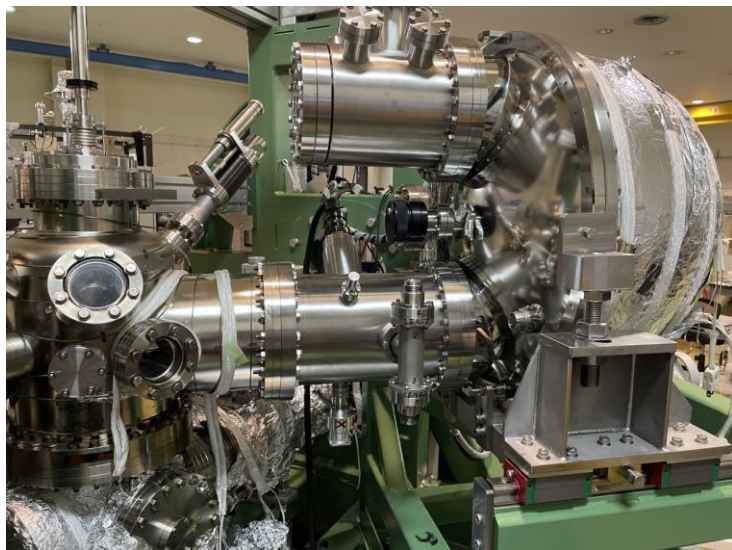
**For measurements of the  
electronic structure of solids!**

# Sample holder: Omicron type



The load lock at BL-1 can stock up to eight holders.

# Analyzer: MBS-A1

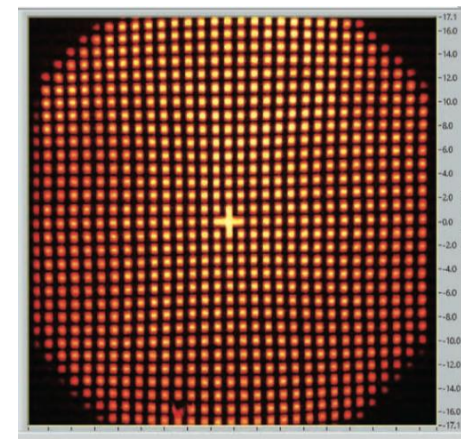


Synchrotron radiation

50°

Sample

$\theta$ x- $\theta$ y scan is possible by deflector



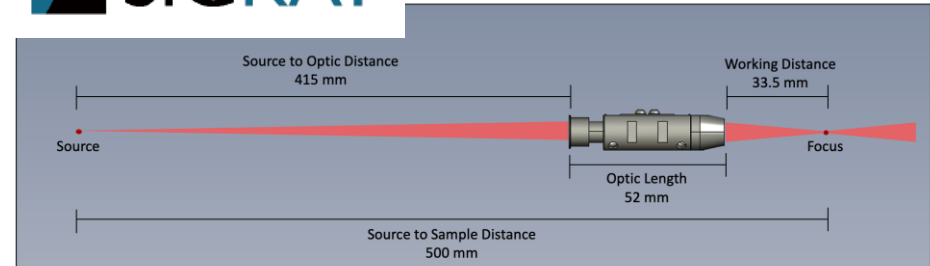
# Elliptical mirror (Sigray)



← Focusing mirror for the synchrotron radiation is installed in the beamline.

**Beam focus:  $\sim 70\text{-}100\ \mu\text{m}$**

 **SIGRAY**



## $\mu$ -Laser ARPES

- ❑ We also use the VUV laser source, mode-locked Ti:sapphire laser and a harmonic generator.
- ❑ We can tune the photon energy between 191 nm (6.49 eV) and 210 nm (5.90 eV), with repetition rates ( $>80$  MHz), pulse duration ( $> 10$  ps), high intensity ( $> 10^{14}$  photons/sec) and ultra-high energy resolution achievable.
- ❑ The beam size is 5-10  $\mu\text{m}$ .

