

Recent upgrades and activities of HiSOR BL-1

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The Hiroshima Synchrotron Radiation Center (HiSOR) is a compact race-track electron storage ring. As a linear undulator beamline, BL-1, one of the HiSOR beamlines, is operated for high-resolution angle-resolved photoemission spectroscopy (ARPES) in the VUV and soft X-ray regions [1], and many interesting studies have been reported [2-5]. In recent years, the necessity to measure the fine electronic structure in a wide variety of samples, for example, microscale samples, has led to a demand for ARPES experiments with energy resolution of a few meV using synchrotron radiation and controlling fine sample positions.

For these purposes, we have improved the endstation and beamline of BL-1 (Fig. 1): Beam sizes focused by a mirror, fast measurement by a newly installed electron analyzer, etc. To test the performance of the instruments, we measure the energy resolution using the evaporated Au sample. The total energy resolution which is determined by the monochromator, new hemispherical electron analyzer (MBS-A1), and resolution of synchrotron radiation including the thermal broadening at 10 K shows ~ 4.5 meV ($h\nu = 40$ eV). In the poster presentation, we will show details of the present status of BL-1 and upgrades in near future.



Figure 1. Beamline 1 (BL-1) (linear undulator beamline) for high-resolution angle-resolved photoemission spectroscopy (ARPES). The light polarization is changed by rotating the endstation (*s*- and *p*-polarization are available).

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