Characterization of BL01B1

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The beamline BL01B1 is for an x-ray spectroscopy, especially for XAFS measurements, widely ranging from 4.5keV to 90keV. The light source is synchrotron radiation from a bending magnet. The aims of construction of this beamline are to offer to i) high energy x-ray spectroscopy, ii) precise XAFS including theoretical works, iii) Raman scattering in x-ray and modulation XAFS, iv) x-ray spectroscopy in dilute system. Last Autumn, this beamline was in a trial running and several terms of appraisements such as photon flux, energy resolution and reduction degree of higher harmonics were curried out. The important parameters are shown in Table 1. All in the Table 1 are the values at the sample position.

Table 1. The specification of the beamline.

Energy range	4.5 ~ 90 keV
Energy resolution	$<2\times10^{-4}$
Photon flux	$10^{10} \sim 10^{12}$ Phs/s
Higher harmonics	$< 10^{-5}$
Beam size	0.2 ~ 0.3 mm^2

The characterization in high energy region over 40 keV was made by Nishihata, and their results will be reported in another pages. In low and middle energy range (4.5 keV ~ 40 keV) the mirror performance is checked, and the several spectra were measured to characterize totally the beamline. Figures show typical spectra. The metal Mo data of (a) is the first spectrum of this beamline. Figure (b) shows Cs *K*-edge spectrum of CsO_2. This spectrum is representative in a good S/N ratio over k ~ 22 $Å^{-1}$. Last figure (c) shows Eu L_{III}-edge spectrum. In initial stage of the beamline, several problems were found. Almost all troubles come from monochrometer. One of the severe problems is stability of the x-ray intensity at the sample position. (Now, it was overcome owing to make hard effots by beamline staffs.)