

# Fast polarization switching at the soft X-ray beamline PF-BL-16A

Kenta Amemiya, Masako Sakamaki, Akio Toyoshima, Tsuneharu Koide,  
Kenji Ito, Kimichika Tsuchiya, Tomohiro Aoto, Tatsuro Shioya,  
Shigeru Yamamoto, Kentaro Harada, Takashi Obina and Yukinori Kobayashi  
Photon Factory, IMSS, KEK, 1-1 Oho, Tsukuba, 305-0801 Japan

The fast polarization switching technique in the soft X-ray region is being developed at PF-BL-16A (Fig.1) [1], with a support from the quantum beam technology program of MEXT. Two APPLE-II type undulators are aligned in the tandem configuration and set to different polarizations such as right and left circular or horizontal and vertical linear polarizations. The polarization switching is realized by modulating the electron orbit through the undulators by using five kicker magnets as illustrated in Fig. 2 [2]. After the installation of undulator II in this summer, the commissioning of the two undulators, kicker magnets and beamline is now underway. The ultra-high sensitive X-ray magnetic circular dichroism (XMCD) measurement will be achieved, as well as the real-time observation of the chemical and structural change at the surface.

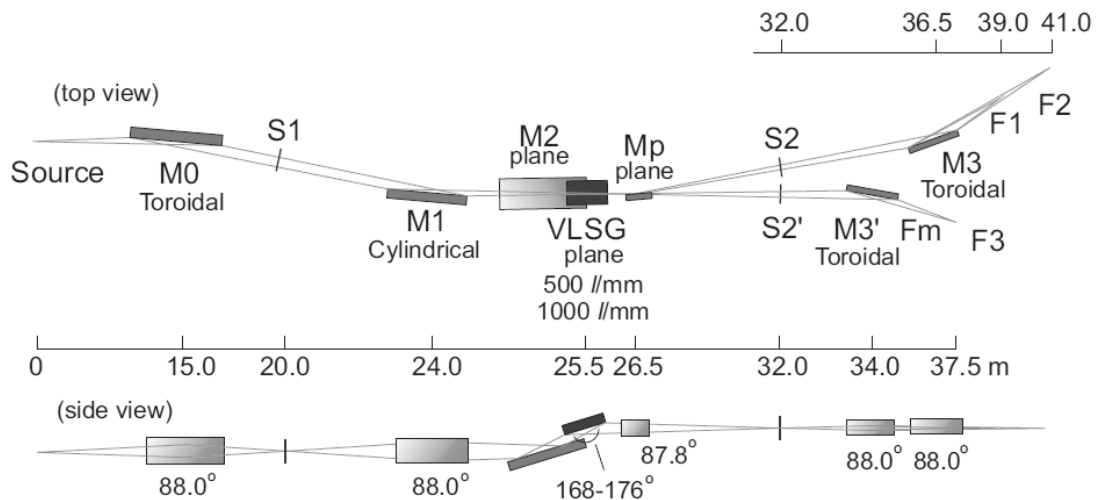


Fig. 1. Schematic layout of the soft X-ray beamline, BL-16A.

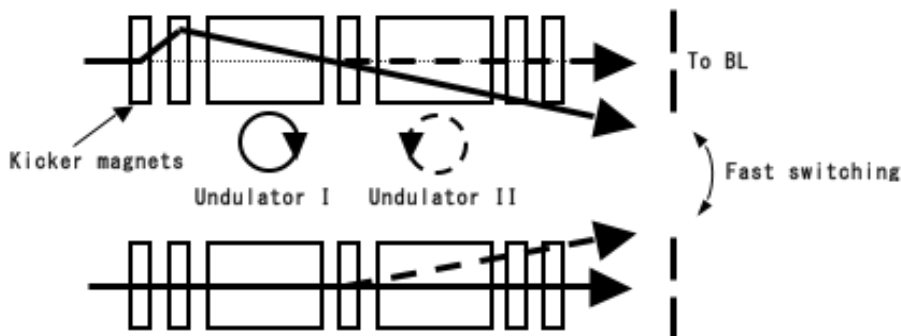


Fig. 2. Schematic diagram for the fast polarization switching.

[1] K. Amemiya *et al.*, *AIP Conf. Proc.* 1234 (2010) 295.

[2] T. Muro *et al.*, *J. Electron Spectrosc. Relat. Phenom.*, 144-147 (2005) 1101.