

Real-time imaging system for magnetic domain at BL25SU in SPring-8

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A combination of x-ray magnetic circular dichroism and photoemission microscopy (XMCD-PEEM) is one of the popular techniques to image magnetic domain structures (MDS). In BL25SU, SPring-8, twin-helical undulators and PEEMSPECTOR have been installed as shown in Fig. 1. The twin-helical undulators enable fast helicity switching of circularly polarized light at 10Hz, 1Hz and 0.1Hz. Combining the above technique with the fast helicity switching makes an imaging procedure quick and convenient. We have developed both hardware and software for synchronization of helicity switching, the CCD camera, and monochromator. The VME computer that controls ID is connected to a measurement computer by two BNC cables. The status of helicity is sent by using TTL signals. In order to have the flexibility, the software that synchronizes the CCD shutter and the TTL signals has been developed. We succeeded in synchronizing the CCD camera at both 1Hz and 0.1Hz modes. The system enables quick spatial-resolved XMCD measurement.

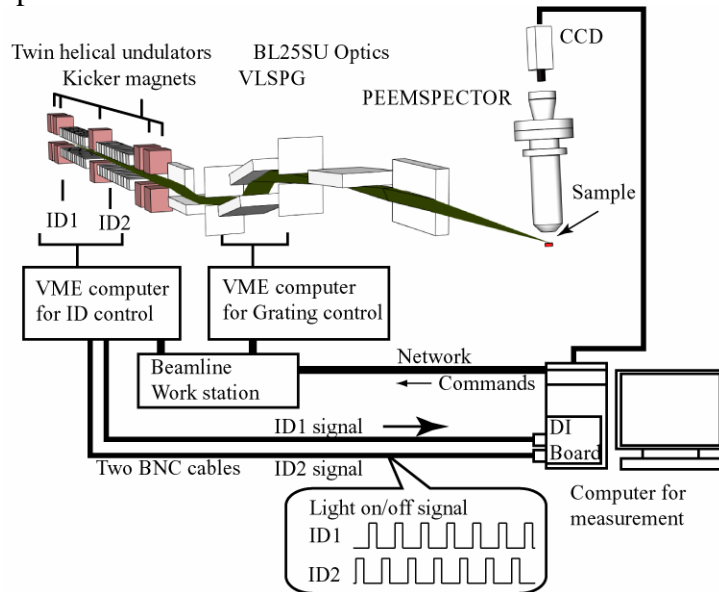


Fig. 1 The schematic view of the real-time imaging system of magnetic domain.