Soft x-ray absorption spectroscopy measurement methods with using x-ray scattering techniques — H. JANG, Department of Physics, POSTECH, Korea, J.-S. LEE, SSRL, SLAC, USA, W.-S. NOH, K.-T. KO, K.-B. LEE, Department of Physics, POSTECH, Korea, B.-G. PARK, J.-Y. KIM, PAL, POSTECH, Korea, S.H. CHUN, K.H. KIM, Dept. of Physics and Astronomy, Seoul National University, Korea, J.-H. PARK¹, Department of Physics, POSTECH, Korea — Methodology via x-ray absorption spectroscopy (XAS) has been actively employed for exploring the microscopic aspects of materials. In particular, such method within soft x-ray energy range is very useful for investigating strongly correlated systems, such as high Tc superconductor, and multiferroic, including heterostructures. While XAS approach on such materials has been used, however we sometimes confront a few of experimental difficulties; electron motion distortion under external fields, charging effect, and saturation effect. In this presentation, we introduce an alternative approach for overcoming the difficulties in conventional XAS measurement, which uses soft x-ray scattering techniques, i.e., reflection and diffraction. Due to photon-in and photon-out nature, probing depth becomes longer and possible to reduce several problems in conventional total electron yield method. The results of demonstrations on simple monoxide CoO and multiferroic Y-type hexaferrites will be given.

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