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**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. PARK[1], 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 $T_C$ 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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