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High pressure XAS and XMCD studies on the ODE beam line at SOLEIL LUCIE NATAF, FRANCOIS BAUDELET, QINGYU KONG, SEBASTIEN CHAGNOT, Synchrotron SOLEIL — X-ray Absorption Spectroscopy (XAS) is a very useful probe to obtain local information in materials science. It is suitable for a variety of compounds, since a long-range order is not required. Matsushita has been the first to propose an alternative to the classical method of recording absorption spectra: the dispersive set-up. Instead of scanning the energy step by step, only one crystal is used and bent in such a way that it directly opens an energy range and focuses the beam. Since then, a few beam lines have been developed on this idea, the ODE beam line of the SOLEIL Synchrotron is one of them. Absorption measurements using this set-up present the advantages to be very fast (down to a few μs) and very stable, since no mechanical movements are required. These characteristics make the dispersive XAS technique suitable for investigating small samples, following kinetics and measuring small signal to noise ratio (down to 10^{-5}). Thanks to its focusing optics, the dispersive set-up is very well adapted to high pressure, the sample chamber being typically of about 100μm in diameter and 20 μm in thickness. Moreover, the ODE beam line is built on a bending magnet allowing a circular polarization of the beam, hence providing X-ray Magnetic Circular Dichroism (XMCD) measurements. In this poster, we will present some XMCD and fast kinetic results recently obtained and the last improvements of the ODE beam line.

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