
ADAPTING AN ABSORPTION BEAMLINE TO PERFORM XRD COMBINED WITH XAFS EXPERIMENTS

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During the summer scholarship program in the Brazilian Synchrotron Light Laboratory, the XAFS2 beamline was adapted to perform X-ray Diffraction measurement. This beamline instrumentation allows us to open a new possibilities on the usual XAFS experiments, which is specially useful for combine the techniques to obtaining structural information on short and long range order. We explore both techniques performing *in situ* studies with a capillary micro-reactor [1] at the same time the hydrogen desorption was measured with mass spectroscopy on metal hydrides (MgCo compounds) during a thermal treatment under helium atmosphere. The possibility of changing the experimental setup between XAFS and XRD within minutes a complete description of the material changes in various operating conditions, were obtained. Indeed, this is a very promising set up combination to explore catalysts or functional materials, which increase the research possibilities of the beamline.

[1] S.J.A Figueroa, D. Gibson, T. Mairs, et al., J. Appl. Cryst., 2013, 46, 1523-1527