



	Experiment title: Central Metal K edge EXAFS of porphyrin molecular	Experiment number: 08-01 945
Beamline: BM08	Date of experiment: from: 13/11/2013 to: 19/11/2013	Date of report: 26/02/2014
Shifts: 15	Local contact(s): Simona Torrenco	<i>Received at ESRF:</i>
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Report:

XAFS experiments at the Transition Metal (TM) K edges in porphyrin derivative molecular thin films, have been measured also exploiting the orientational dependence of the XAFS signal to probe the structure in and out of the film plane.

We detected reproducible, though slight differences in the XAFS by comparing the compressed powder and the UHV growth films, indicating the effect of intermolecular interaction in the films. The EXAFS analysis is in progress in order to get a highly accurate and reliable determination of the local structure around the TMs in solid phases. Moreover spectra will be analyzed in the full multiple scattering approach, using the MXAN code for the near edge part.

We also exploited the orientational dependence of the XAFS cross section to selectively probe the local atomic structure parallel and perpendicular to the substrate, thus also providing additional information on the degree of ordering (Fig. 1). The ordered samples were prepared ex situ in UHV environment.

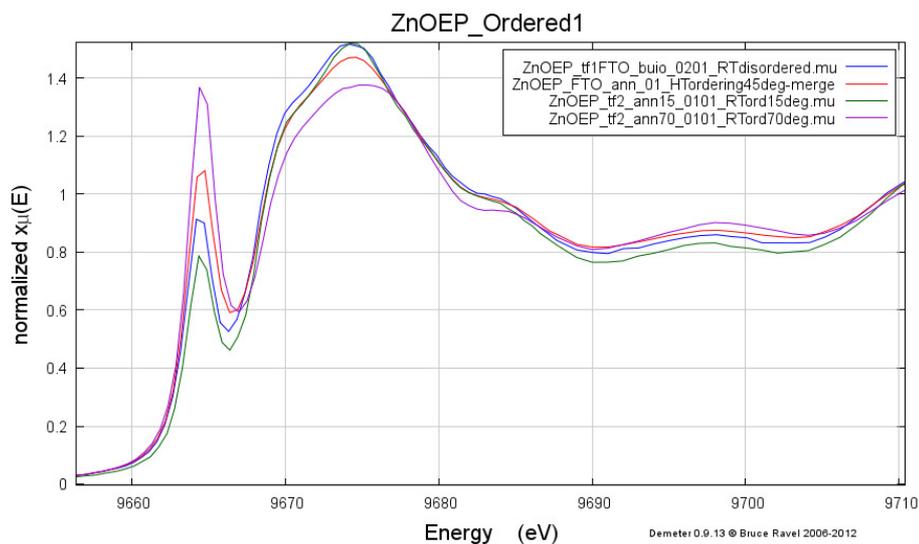


Fig. 1 NEXAFS of Zn K edge of ZnOEP ordered films. The Intensity of the structure at about 9665 eV as a function of the incidence angle is a strong indication of the order.

We aim to continue our study, extending our analysis to different porphyrinoid complexes grown presenting different morphologies in conjunction with magnetic and spectroscopic characterization performed in house.