



	Experiment title: Investigation of local structure of laser shocked GeO ₂	Experiment number: HC-2576
Beamline:	Date of experiment: from: 03/06/2016 to: 07/06/2016	Date of report:
Shifts:	Local contact(s): Raffaella Torchio	<i>Received at ESRF:</i>
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Report:

This proposal was meant to investigate the local structure of laser shocked GeO₂ polymorphs. In particular we wanted to investigate their melting curve, so far largely unexplored since experimentally very challenging because of the easy decomposition.

Moreover, recently the metallization of laser shocked of the chemical analogue SiO₂ has been observed using VISAR diagnostic and by means of time resolved x-ray absorption. Given the similarities of the GeO₂ and SiO₂ systems, an analogous phenomenon is expected to occur in Germania at more moderate conditions.

Unfortunately during the experiment the XH detector, available on the energy dispersive beamline ID24, and allowing single bunch measurements, failed.

We could however record some reference samples (see Figure) and show that single bunch measurements can be acquired with sufficient data quality, allowing for a time resolved laser shock experiment.

Nevertheless no data could be acquired under dynamic compression by laser shock.

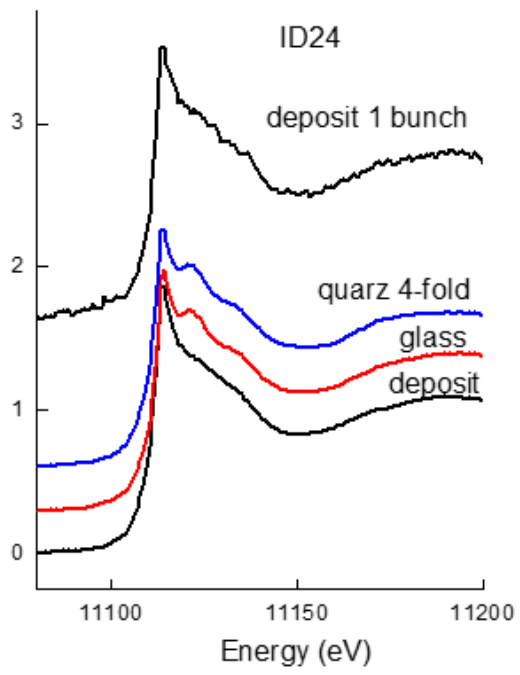


Figure 1: reference XAS spectra of different GeO₂ polymorphs. On top: single bunch acquisition on glassy GeO₂