Thematic area

Development of new Analytical Tools

Start date: 01.07.08
End date: 31.06.09

Title

Adaptation of the NanoXAS Instrument to a dedicated Beamline at the SLS

Overview

The NanoXAS instrument was funded by CCMX, Empa and PSI. It was originally planned that this instrument will be operated at the existing PolLux beamline of the SLS as additional endstation.
In the meantime the PSI got funding for a dedicated beamline (X07DB), which will be operational by the end of 2008. Higher x-ray energies at the new beamline, covers energies up to the Al-1s (1560eV) absorption edge, we are then able to cover several absorption edges of element relevant to semiconductor industry (Ga, Ge, As, Al).
This is a significant improvement compared to the PolLux beamline, covering only energies up to 1200 eV. The operation at a dedicated beamline allows a broader community to have access to this instrument since the available beamtime is increased by a factor of 5-6. The set up of the instrument at the new beamline requires a moversystem for the alignment of the microscope with respect to the x-ray beam. For the design and the implementation we need an engineer and a technician which will also be responsible for adaptation of sample holders for the variouse users.

Goal

Engineer (Empa): design adaptations of NanoXAS instrument and vacuum chamber needed to fit to the dedicated NanoXAS beamline, improvements of NanoXAS instrument and adaptation to user needs.

Technician (PSI): Installation and optimization of X07DB beamline, installation and test of Girder Mover system.

Main achievements

April 2008: design adaptations of NanoXAS instrument and vacuum chamber needed to fit to the dedicated NanoXAS beamline
October 2008: installation and test of Girder Mover system.
January 2009: first light at the new NanoXAS beamline (X07DB)

Principal investigator

Dr. Christoph Quitmann, PSI

Partners

- Empa
- Undisclosed semiconductor manufacturer