Report from abroad travel

1. Full Names: Klaudia Wojtaszek

2. Organizational Unit: Jan Kochanowski University in Kielce

3. Travel purpose: Scientific Experiment

4. Country and area target: Paul Scherrer Institut, Villigen Switzerland

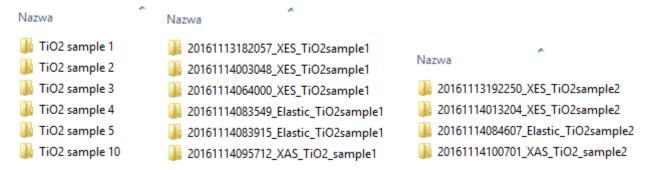
5. Duration of travel: 11-15.11.2016r.

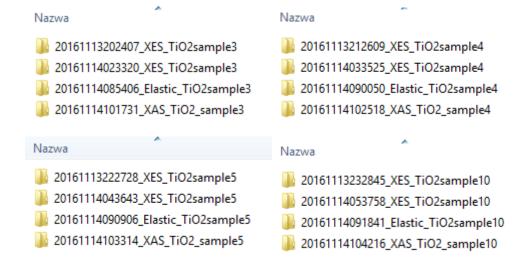
6. The task / achievement:

The purpose of this travel was to conduct a scientific experiment at SuperXAS beamline of Swiss Light Source, Switzerland. The experiment was conducted as part of Task 2 and Task 3 of the SonataBis project: "Investigation on surface and bulk TiO2 electronic structure based on experimental results and theoretical evaluations" and "Investigation of surface/bulk electronic structure in TiO2-doped with N, C and S at material's working conditions." During the above-mentioned experiment were measured samples of titanium dioxide (pure and nitrogen doped.

The X-ray at beamline are collimated by Si-mirror that provides high energy cut-off at 10 keV. The monochromatization is performed with double crystal Si(111) monochromator providing relative energy resolution ΔE/E of 2 x 10⁴ that at Ti K-edge gives 1 eV bandwidth. X-ray beam is focused down to 100 x 100 μm² spot with Pt-toroidal mirror placed downstream of monochromator. The experiment was conducted around the K- absorption edge. The Kb X-ray emission from the sample was measured by means of von Hamos-type X-ray spectrometer equipped with Ge(400) crystal for X-ray dispersion at central Bragg angle of 61. Presented experimental arrangement allowed for determination of resonant X-ray emission and X-ray absorption spectra.

7. Short summary and list of measured data:





8. Supervisor signature:

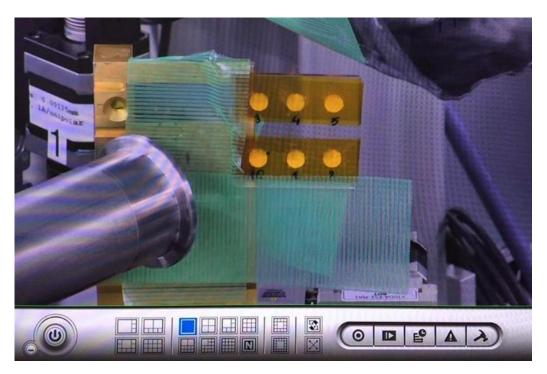


Figure 1: Photograph of the samples as installed at SuperXAS beamline of SLS.