

# Tomography alignment automation

One of the routine experiments at the P06 scanning microscopy beamline is tomography. Tomography is a 3D imaging technique where a 3-dimensional image of a sample is constructed from a series 2D images taken from different angles. For this, the sample is mechanically rotated, as well as translated in the focused x-ray beam. A critical preparatory step is the alignment of the sample and rotation axis so that the sample is always in frame during rotation. While a simple task in principle, it is a process prone to human error. More often than not, this is a time consuming process, which depending on circumstances can even take multiple hours. P06 would like to automate its tomography alignment procedure as much as reasonably possible. Starting with coarse alignment based on visible light microscopes, and eventually progressing down to the sub micron alignment precision needed to place small crystal grains into the axis of rotation.

## Group

FS-PETRA-S (P06)

## Project Category

A4. Development of experimental techniques

## Special Qualifications

## DESY Site

Hamburg

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