

Working with the X'PERT Thin film diffractometer

- If you have never used this instrument, you need to receive proper training. For that, please contact Beatriz Noheda (Ext: 4565, b.noheda@rug.nl)
- This is a NANOLAB instrument and for its management, we need to have records of who uses it and when. For that, you are requested to write the date, your name and your group clearly in the logbook.
- Please, write also your phone extension or email address so that we can contact you if there is a problem during or after your measurements.
- It is also useful if you write some information about the type of measurements you are performing and on which samples.

When performing an experiment, you need to know:

1. The diffractometer is controlled through the *X'pert Collector*. You can access it using: user name= hibma, password= tsiis.
2. The working conditions of the x-ray tube are: 40kV, 40 mA. Never use larger values during measurements. If you find lower I, V values, increase them slowly (in discreet steps) using the suitable option in the *X'pert Collector*.
2. Check that the slits and other optical elements in the incident and diffracted paths, as set in the software, agree with those you have at the instrument.
- 2.- Place one of the Cu attenuators in front of the beam while performing the detector and sample alignment (otherwise the direct beam incident on the detector will burn it!)
- 3.- Before setting your sample, align the detector to calibrate 2θ : Perform a 2θ scan around 0 (-0.5 to 0.5); move to the position of the maximum. If this position is different than 0 by more than 0.2° , make a note in the logbook. Go to the Offset menu and set that position to $2\theta = 0$.
- 4.- Then make a note in the log book of the I_{\max} (in counts/s) at $2\theta = 0$, together with the thickness of the Cu plate and the slits you have used. In this way we can trace if the alignment and the state of the X-ray tube are good enough.
- 5.- You can now place your sample and start the sample alignment.
- 6.- Users external to the SSME group are not allowed to use the Anton Paar heater without discussing it with B. Noheda or book the diffractometer for more than two days in a row.

For problems, please contact Beatriz Noheda (b.noheda@rug.nl; Ext. 4565)