SOP Ellipsometer

- Turn on the laptop
- User name: ellipsometre Password: ellipsometre
- Go under the website: http://lppc35.epfl.ch/CAE1200/cae.html
- Enter your login and your password (Gaspar). Press valider.
- Select the ellipsometer and press again valider. It will turn on the mouse and the keyboard of the ellipsometre computer.
- Check that the tray of the ellipsometrer is at the minimum.
- If someone has worked before you the lamp should be on. If this is not the case turn it on frankly.

Attention: The lamp has to be switched on for a certain period of time. This is better to leave it on for few weeks and when we know that nobody is working for a while, we turn it off. To know if someone will work after you, please have a look on the booking system or contact Cindy Känel.

- Open the software Gespacq. No password, press OK.

Four windows are interesting for us: Show, Parameters, Measurements and Others.

Show

- We check the detector. Change the wavelength: for example \( \lambda \): 450nm or 550nm Enter (listen and wait)
- Analyzer angle: 0° (maximum signal) Enter
- Incidence angle: select the angle that you want for your analysis and Enter. The arms are moving. In case of problem be ready to stop the ellipsometer with the white button.
- Correction: possible

You can see three screens:

1. Intensity (cts/s). Expression of the intensity in function of the time.
2. Express a residual value which has to be as small as possible.
3. The symmetry expresses the fact that there is a tilt on the sample \( \rightarrow \) if the sample is straight or not.

Find the point where the intensity is at the maximum by changing the height of the sample table manually.

Reach the maximum of cts/s (~23.000.000). The spot is in the middle of the diagram.

When the maximum is reached, add an attenuator \( \rightarrow \) 5.000.000
Reach the maximum again → 12.000.000

Add the second attenuator → 2.100.000 (It is usually between 2.000.000 and 6.000.000).

Adjust the tilt of the sample table to decrease the symmetry value well below 1%.

The Residuals can be used by applying corrections. (lin/pol).

If we want to change the angle, we stop the number of counts and we change the angle (pressing count)

⇒ The sample position is set.

**Parameters**

- Polarisation & Geometry
  - Previous tracking: 45°
  - Incidence angle: Scanned (can change in function of the sample thickness) from 30° to 75° with steps of 2°.
  - Or Fixed: At a certain angle from 351nm to 800nm with step of 1 (if only visible detector is used and UV filter is used).
  - Use calibration angle: No

- Time and wavelength:
  - We change the angle or the wavelength.
  - Integration time: target: 500.000, max. time: 5 sec
  - Spectrometer: Fixed
  - Spectral position: 500

- Others: Position of the analyzer in function of the polarizer Accept.
  - Retardator: No
  - Correction: Non Linear + Polar.
  - Special: Use Attenuator, Microspots and UV Filter.
  - ⇒ Accept

**Measurements**

⇒ Start