






h. 11:50 samples inserted in the chamber.

Sample n 6:

Configure position of sample.

Manipulator

<p>Moving Type ThetaM</p> <p style="text-align: center;">Absolute</p> <p>Absolute Angle (°)</p> <p style="font-size: 1.2em;">-45.0000</p>	<p style="font-size: 1.5em; text-align: center;">ThetaM</p> <p style="text-align: center;">Go </p>	<p>Actual position</p> <p style="font-size: 1.1em;">-45.0000</p> <p>Status</p> <p style="border: 1px solid black; padding: 2px;">NOT RUNNING</p> <p>Error</p> <p>No error</p>
<p>Moving Type PhiM</p> <p style="text-align: center;">Absolute</p> <p>Absolute Angle (°)</p> <p style="font-size: 1.2em;">0.0000</p>	<p style="font-size: 1.5em; text-align: center;">PhiM</p> <p style="text-align: center;">Go </p>	<p>Actual position</p> <p style="font-size: 1.1em;">-0.0031</p> <p>Status</p> <p style="border: 1px solid black; padding: 2px;">NOT RUNNING</p> <p>Error</p> <p>No error</p>
<p>Moving Type XM</p> <p style="text-align: center;">Absolute</p> <p>Absolute position (mm)</p> <p style="font-size: 1.2em;">5.0000</p>	<p style="font-size: 1.5em; text-align: center;">XM</p> <p style="text-align: center;">Go </p>	<p>Actual position (mm)</p> <p style="font-size: 1.1em;">5.0001</p> <p>Status</p> <p style="border: 1px solid black; padding: 2px;">NOT RUNNING</p> <p>Error</p> <p>No error</p>
<p>Moving Type YM</p> <p style="text-align: center;">Absolute</p> <p>Absolute position (mm)</p> <p style="font-size: 1.2em;">14.0000</p>	<p style="font-size: 1.5em; text-align: center;">YM</p> <p style="text-align: center;">Go </p>	<p>Actual position (mm)</p> <p style="font-size: 1.1em;">13.9988</p> <p>Status</p> <p style="border: 1px solid black; padding: 2px;">NOT RUNNING</p> <p>Error</p> <p>No error</p>
<p>Moving Type ZM</p> <p style="text-align: center;">Absolute</p> <p>Absolute position (mm)</p> <p style="font-size: 1.2em;">-3.0000</p>	<p style="font-size: 1.5em; text-align: center;">ZM</p> <p style="text-align: center;">Go </p>	<p>Actual position (mm)</p> <p style="font-size: 1.1em;">-3.0010</p> <p>Status</p> <p style="border: 1px solid black; padding: 2px;">NOT RUNNING</p> <p>Error</p> <p>No error</p>

Sample n 9:

Same as sample n 6, but XM = -2 mm

Sample ITO MLI:

Same as sample n 6, but XM = -11 mm

Sample ITO rad:

Same as sample n 6, but XM = -11 mm, YM = 24 mm



First we scan the photoelectric yield as a function of the energy of the incident photon.

We identify 7 energy regions (corresponding to the energy regions of the available filters, blue window above).

3-4.5	B270
4-8	SiO ₂
7-12	LiF
11-18	In
15-25	Sn
23-30	no filter
23-30	Al

File #1 is the test macro for the total yield ($\theta_m = -45^\circ$). The energy step (ΔE) for the test has been chosen to be 0.5 eV.

File #2

After the test we realised that the gains for the samples were ok (all at 200 pA, except the last two regions at 20 nA), but for monitor instrument (Kithley A) they

were too high (they had been set all to 200 pA). Now they have been set the same as the samples and DeltaE has been set to 0.1 eV.

File #2 is the macro for total yield ($\theta_m = -45^\circ$)

File #3

All as file n 2, except the $\theta_M = -90^\circ$

File #4: dark scan for KA range 20nA, KB range 20nA

File #5: dark scan for KA range 200pA, KB range 200pA

File #6: All as file n 2, except $\theta_M = -20^\circ$

File #7: All as file n2, except $\theta_M = -60^\circ$

during run, beam instability occurred (or other error) data will be drop in beam must have occurred temporally close to changing filters, it is thus not directly observable on the data. For the first sample, all regions should be good though.

Macro modification upon beam error:

first 7 columns removed (first material), saved as "... Samples 2 3 4"

File #8 - rest of the interrupted run, using GNIM 234 macro, started on Tuesday afternoon and finished at 22:30

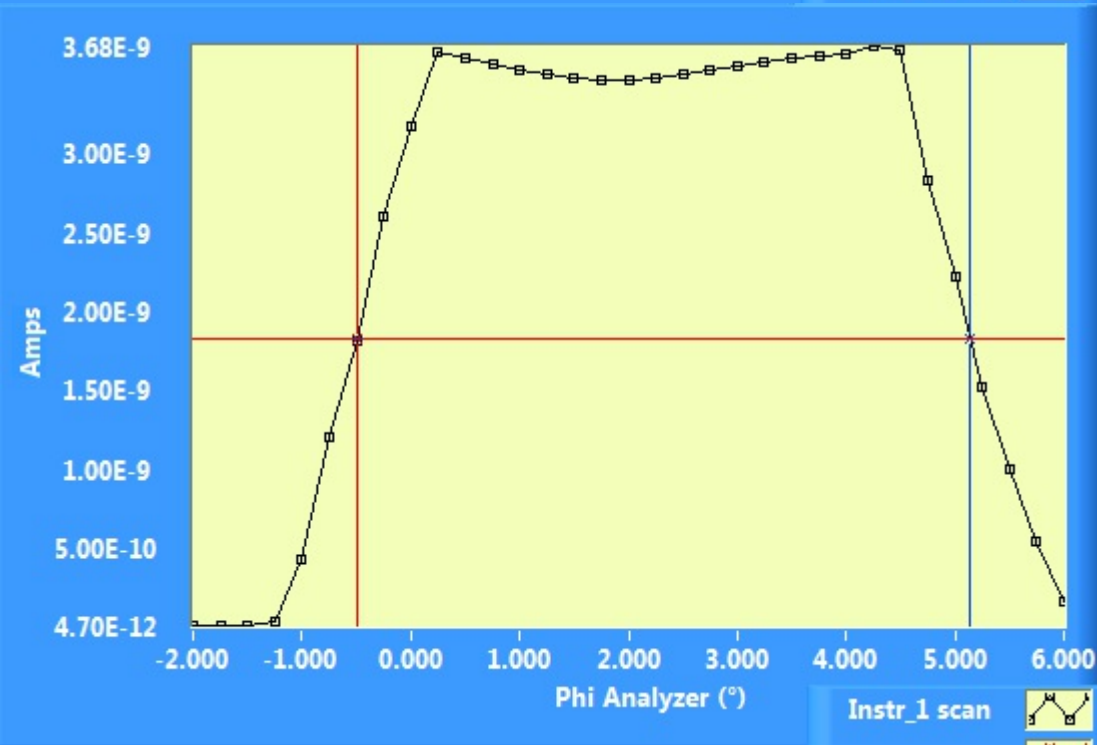
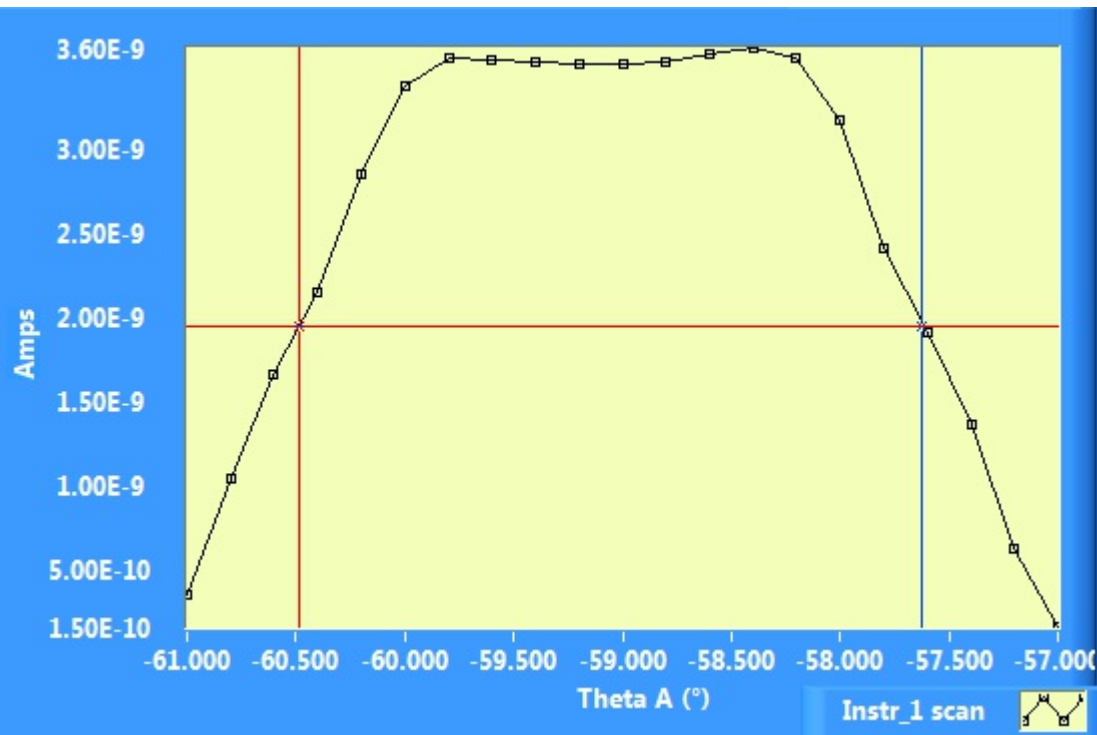
File #9 - All as file n2, except $\theta_M = -75^\circ$. Configured and started by Sebastian at 23:00

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I0 measurement

#10 diode alignment $TA = -59.12$

#11 $PA = +2.32$



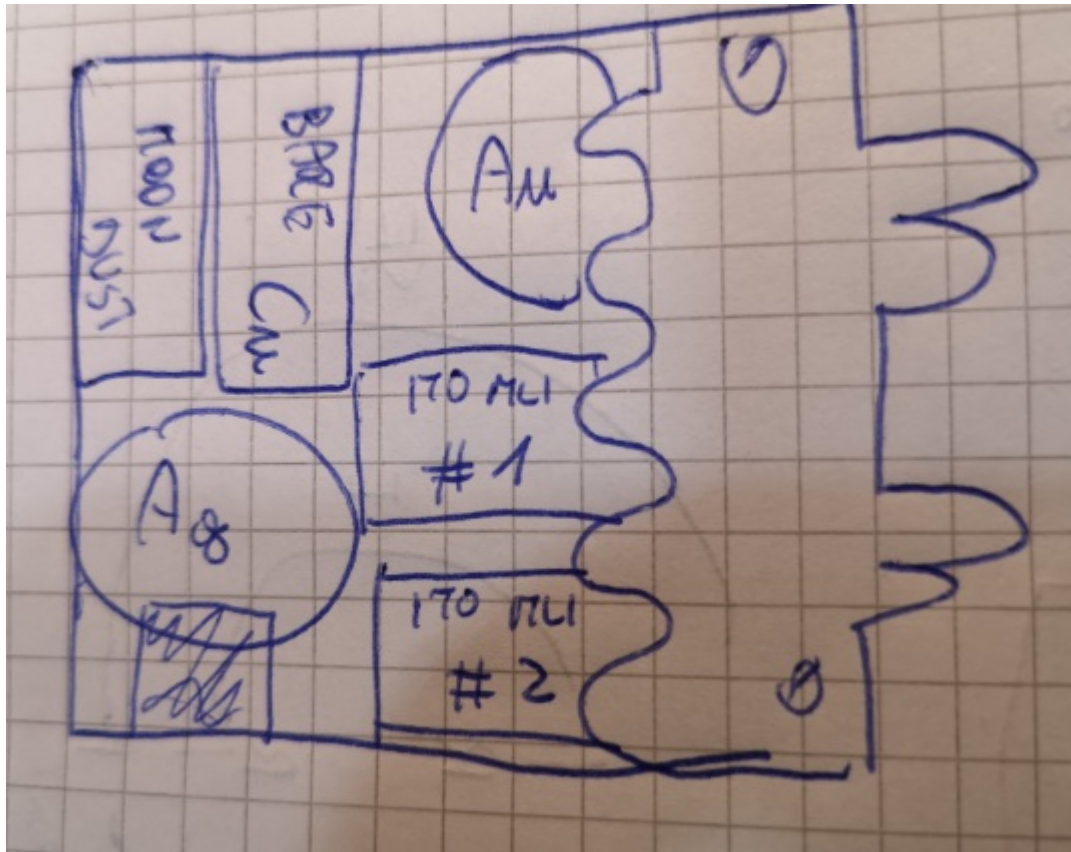
#13 scan to test the ranges of Keithley
#14 I0 measurements: same energy ranges used for TEY

[KA = monitor, KB = photodiode or sample]

- #15 dark KB range=200nA KA range = 20nA
- #16 dark KB range = 20nA KA range = 200pA
- #17 dark KB range = 200pA KA range = 200pA

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Second sample holder



Wednesday 11:00, sample holder n2 was placed into the experimental chamber.

coordinates for each sample were found:

bare copper: $x=5$, $y=16$

gold: $x=4$, $y=10$

ITO MLI #1: $x=-6$, $y=10$

ITO MLI #2: $x=-13$, $y=10$

Ag silver: $x=-9$, $y=22$

Fake dust: $x=4$, $y=22$

file #18 is a test run for the second sample set

h14:15

file #21 TEY of all 6 samples at ThetaM = -45°

file #22 same as mfile 21, but ThetaM = -90deg. This run appears to have the monitor closed, with Kiethley B data non-sense. This run will need to be repeated

file #23 TEY at ThetaM = -75°

Check the spot position at ThetaM = -20° with zero-order

bare Cu: x=4; y=16

Au gold: X=3; y=10

ITO MLI #1: x=-7.2; y=10

ITO MLI #2: x=-15; y=10

Ag silver: x=-10; y=22

Fake dust: x=4; y=22

file #24 TEY at Thetam = -20°: stopped after the third sample
Removed the "Automatic waiting time choice"

file #25 TEY at ThetaM = -20° for the last three samples

file #26 TEY at ThetaM = -90°

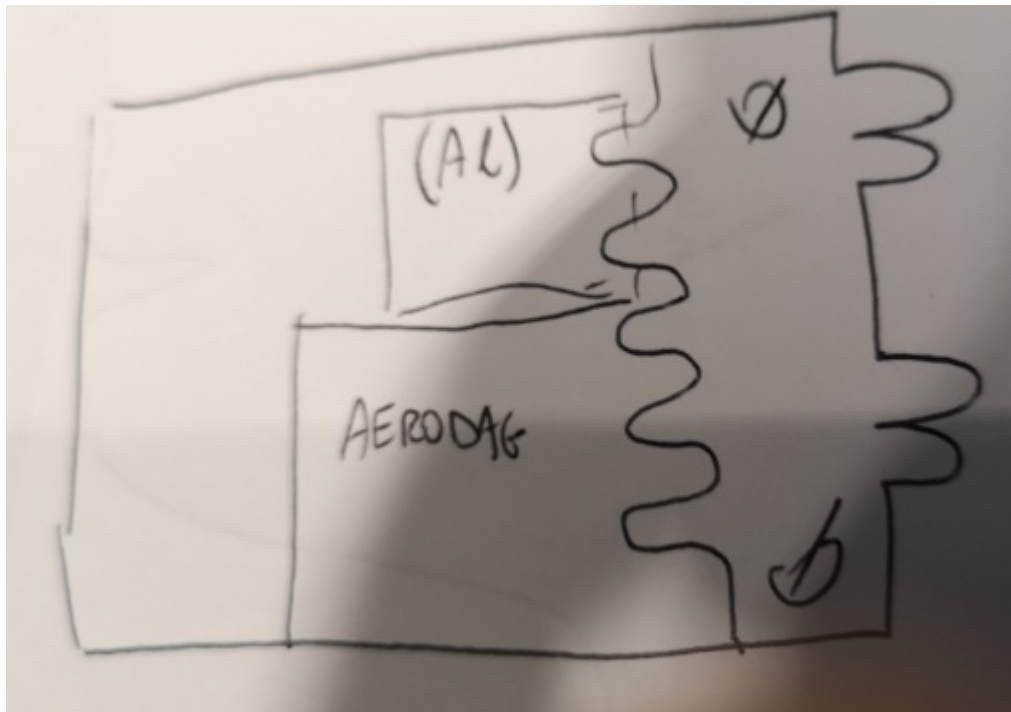
pressure in the experimental chamber cca 10⁻¹⁰ mbar

file #27 TEY at ThetaM = -60deg

Instrument error during the scan on last sample (Fake dust)

file #28 TEY at ThetaM=-60° on fake dust

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Aerodag X=-7; Y=11

Al X=5; Y=11

#29 TEY on two samples changing the angle $\Theta_M = -90^\circ, -45^\circ, -20^\circ$

Sample signal saturated for sample Aerodag at $\Theta_M = -20^\circ$ between 15 eV and 25 eV

WARNING: machine in decay mode

#31 TEY of the saturated region