NANOCALC PTA

Réflectomètre bâtiment 1005 : Lampe visible
Gamme de mesure : 50 nm – 20 µm .

Réflectomètre bâtiment BCAI : Lampe UV
Gamme de mesure : 5nm -

1°/ Start-up

Switch on the lamp

The heights are fixed to avoid damage to the optical fiber.

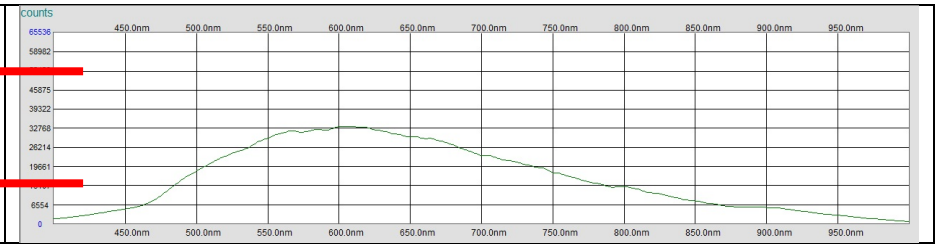
Turn on the PC

Launch the program 

Nous avons cet écran

To carry out a measurement we must :
- Have a good reference (if possible its original wafer before deposit)
- To choose the right program
- To have a signal (between 20% and 80% of the reflectance)

Entre 20 et 80%



I - Choose a reference wafer

1.1 - If it is silicon
Use the wafer If provided

1.2 - If it is an oxide

1.2.1 Use your wafer (Obligation to take an additional measure)

Si measurement on SiO2
- we take as a reference a silicon wafer
- we take our oxide plate
- note the measurement that will be used to perform the following measurements

1.2.2 Use the PTA wafer
- We have a default value of 500µm

1.3 - If it is a thin metal

If the layer is: Si - SiO2 - Metal
You have to know the oxide layer do 1.2.1

If the layer is: Si - Metal
We take a normal measurement using an Si plate as a reference

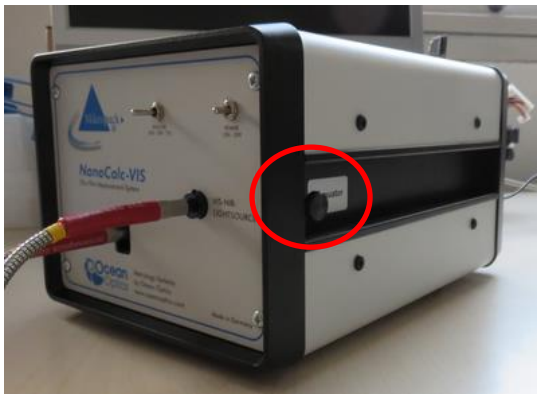
1.4 - use your wafer

II - Vérification du signal

1°/ Mettre son wafer de référence et cliquer sur « REFERENCE »

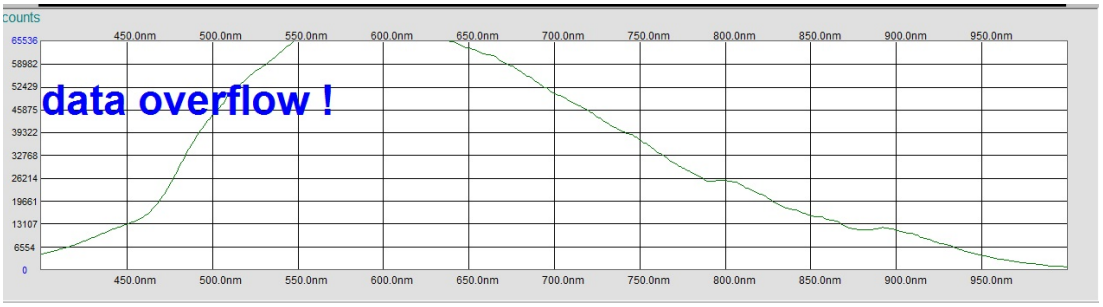
Nous pouvons avoir une mesure en continue en cliquant sur « CONTI » devient rouge

Nous avons ce signal, nous devons ajuster notre signal en tournant la molette sur la droite de l'alimentation si le signal est supérieur à 80% et inferieur à 20%

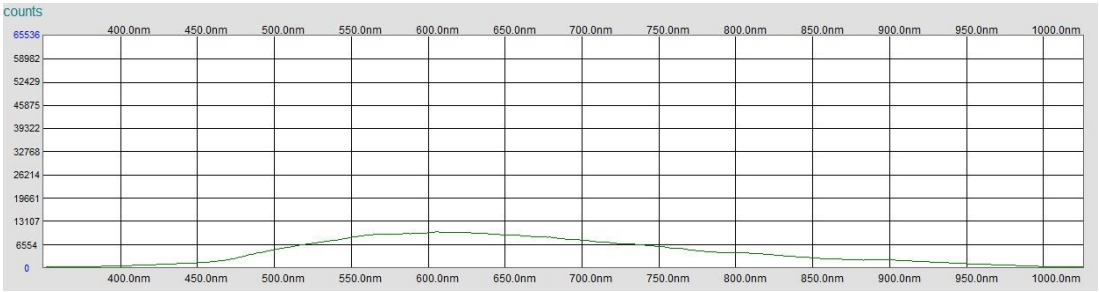


Trop Haut

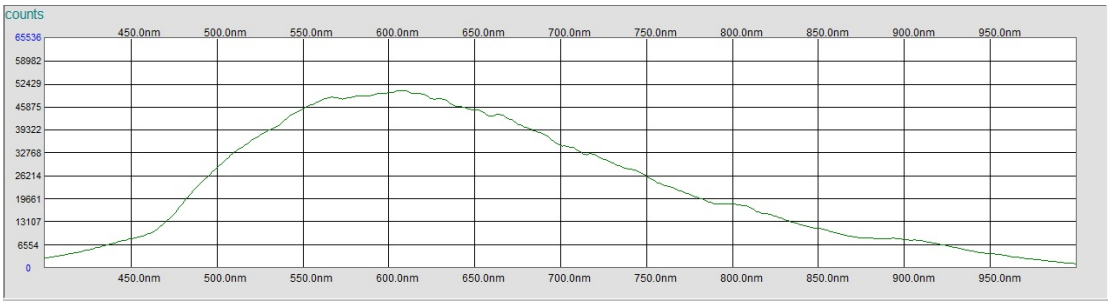
référence : SI

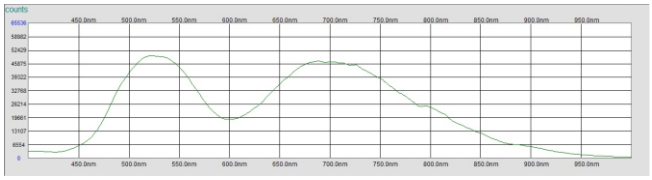


Trop Bas



Adjust the signal to be between 60% et 80% (ici 80%)





Référence SiO2

2 ° / Put your wafer to measure

And do the same

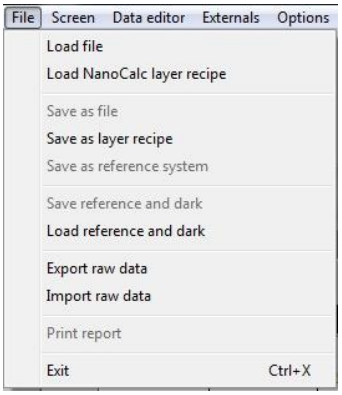
If we have too high a signal suitable for it, if it is too low do not touch it

III - Perform a measurement

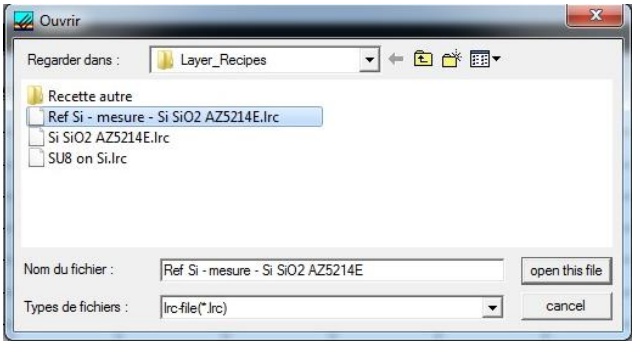
1°/ RECIPE

1.1°/ Use an existing recipe

Go to "FILE" and select "Load Nanocalc layer recipe"



Choose your file

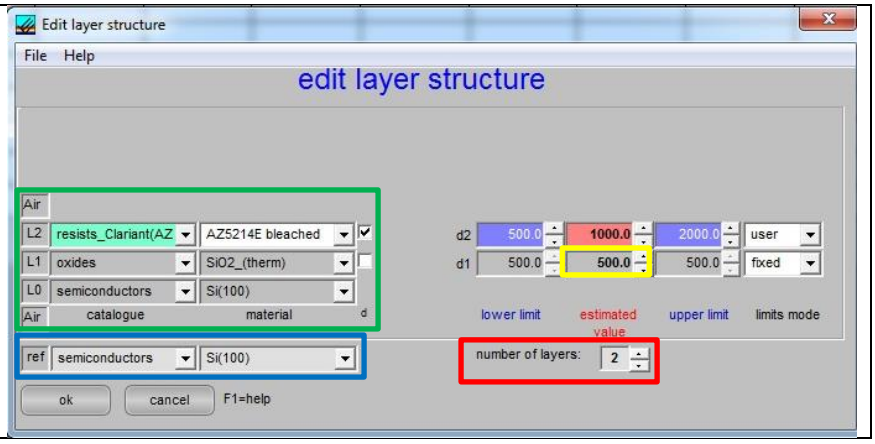


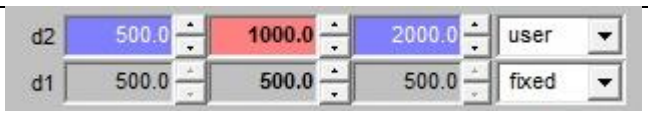
In "EDIT STRUCTURE" we have our recipe which appears

1.2°/ Making a recipe

Create your recipe

Click on " EDIT STRUCTURE ".

Select our reference, here SI 🔵 Select our number of layers 🔴 Select the different layers 🟢 On the Layer L0 (d1) you can set "estimated value" to the exact value. 🟡	

Set a fixed value for line d1 (fixed) Define an approximate value (user) ⚠ only one is analyzed	

1.3°/ For the layers and resins that are not in the list, it is possible to make " layers structure reference ".

2°/ Start the measurement

a/ Put back your reference wafer and click on " REFERENCE ".

- - We have our curve
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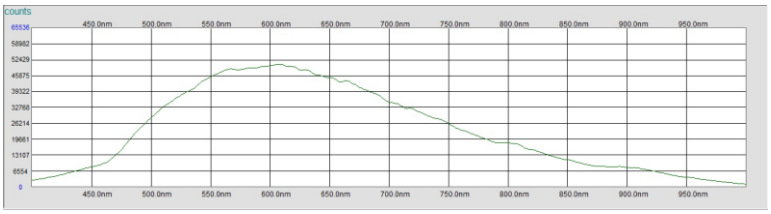
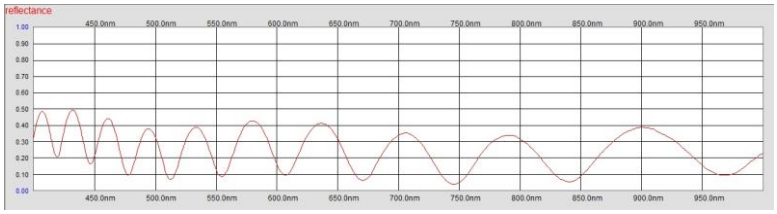


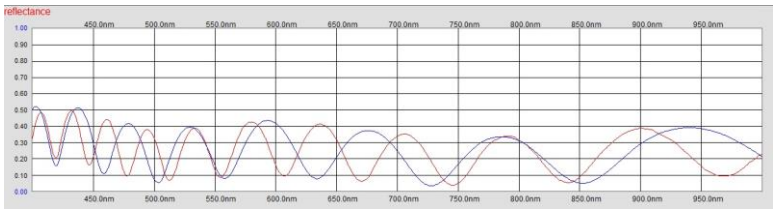
Here reference silicon wafer

b/ Click on " EDIT STRUCTURE ".

c/ Click on " MEASURE ".

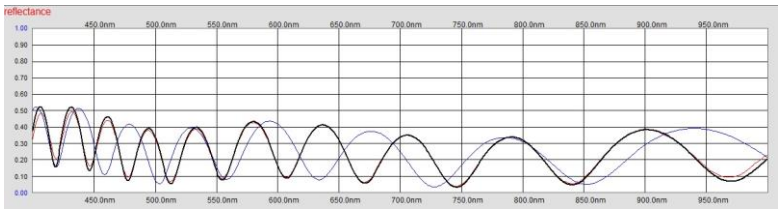


d/ Click on " SIMULATE ".



e/ Click on " ANALYZE ".

we have a 3rd curve



e/ we have the result of our measurement

Fitness is good > 10

Click on "CONTI" for a live measurement.

Layer Structure

resists_Clariant	resists_Arch(Olin)	semiconductors	metals	Plastics
AZ6212	APII	Si	Ag	BCB_cycloten
AQUATAR	ARCH2	a_Si	Al	Cellulose-acetate
AZ_EL_2015	ARCH5000series	a_Si_1	Al-Cu	copolymer_
AZ_NOVA_2071	BPRS-100	a_Si_2	AlSiTi	resists
AZ_OFPR_800	ex-KTI_NegRes	a_Si_3	Au	ETFE
AZ111_exp	HiPR 6512	AlGaAs19	Co	FEP
AZ111_non_exp	HiPR 6512GH_025	AlGaAs31	Co_2	Hitachi_PIQ
AZ1350H_exp	HiPR 6514HC_17HC	AlGaAs41	Cr	PET
AZ1350J_exp	HiPR 6517	AlGaAs49	Cu	PFA
AZ1350J_non_exp	HiPR 6517GH_050	AlGaAs59	Fe	pmma
AZ1500	HiPR 6517GH_070	AlGaAs70	Ir	pmma_495
AZ1518	HPR 200_500	AlGaAs80	Li	pmma_950
AZ1518_SFD	OCG 825	GaAs	Mo	Poly-carbonate
AZ1518HS_WI	OCG 895	GaAsO	Ni	Poly-styrole
AZ1900	OCG 896-10i	Ge	NiSi	Polyimide
AZ3300D	OCG NegRes	Ge_(100)	Ni50Cr50	PTFE
AZ3300S	OFR 6800	Ge amorphous	Os	PVDF
AZ4500	OiR 32	Ge crystalline	Pd	PVF
AZ4620	OiR 32HD	HgCd	Pt	
AZ5214E	OiR 32MD	HgTe	Rh	others
AZ6100	OiR 5503	In As	Ru	a_C
AZ6200B	OiR 620	In Gan	steel	Air
AZ6210B	OiR 622	In Ga As	Ta	BCB
AZ7100	OiR 64	In Ga Sb	Ti	C (amorph)
AZ7200	OiR 643	In Ga N	V	C (Diamond)
AZ7209	OiR 644	In PO	W	CCI4
AZ7510	OiR 670	SiAs	Zn	Cd
AZ7700	OiR 672	SIC		Constant
AZ7800	OiR 897	SiGe	oxides	Cr-C
AZ8100a	OiR 897_XXMK	Si_(100)	SiO2_(therm)	Diamond
AZ8112	OiR 906	Si_(110)	Al2O3	Diaplate132
AZ9100	OiR 907	Si_(111)	BaTi03	DLC_a
AZ9200	OiR 908	Si_poly_1	CeO2	DLC_b
AZ9300		Si_poly_2	Cr203	Dummy
BARLI	Glasses	Si_poly_10	CuO	Graphit
Duran	BK7	Si_poly_20	Fe2O3	H20
Kallistar600	7059	Si_poly_30	Fe304	IRX
Plating	BK7_0.5_mm	Si_poly_40	GeOx	KCI (jellison)
TI35ES	BK7_1.5_mm	Si_poly_50	HfO2	Krypton (283K)
TI-09XR	Glass (KKR)	Si_poly_60	InAsO	KSR_5
Ti-Duran	Glass (microscope slide)	Si_poly_70	ITO	n1
DX46	vis	Si_poly_80	ITO1	n2
	Glass Type 7059 corning	Si_poly_90	ITO2	n3
resists_MRT	Glass Type 7059	Si_porous	ITO3	Na
SU8	Schott	PoSi1	LiNb03	NaCl
ARU400	Schott_0.5_mm	PoSi2	MgO	Water
Ma-N1405	Borofloat40	Zn	Nb2O5	
Ma-N2405	LASF9	ZnCt	PO	tellurides
ma-N400	SF11	ZeTe	SiO	HgCdTe0
ma-N405	SodaLime		SiO2_(CVD)	HgCdTe2
ma-P100	Suprasil	Silicides	SiONO	HgCdTe3
ma-P1205		AlSi	SiOx	CdTe
ma-P205	nitrides	CoSi2	SnO2(F)	PbTe
mr_I 7030	Si3N4	CrSi3	Ta2O3	PZT
mr_l 8030	AlN	FeSi2	Ta2O5	ZnCdTe0
mr_9030	AION	HfSi2	TiO2	ZnCdTe1
	GaN	MoSi2	TiO2_a	ZnCdTe3
Fluorides	SiN1	Ni2Si	WO3	ZnCdTe5
BaF2	SiN2	Pd2Si	Y2O3	ZnCdTe7
CaF2	SiN3	ReSi	Y2O3a	ZnCdTe9
LiF	SiON_00	TaSi2_A	ZnO	ZnCdTe10
MgF2	SiON_20	TaSi2_B	ZrO2	ZnSeTe0
SrF2	SiON_40	TaSi_A		ZnSeTe1
ThF2	SiON_60	VSi2_A	Carbides	ZnSeTe3
ThF4	SiON_80	VSi2_B	SiC	ZnSeTe5
	TiN	WSi2_A	SiC1	ZnSeTe7
resists_Shipley		WSi2_B	Sic_1_mm	ZnSeTe9
SPR500	sulfides			ZnSeTe10
SPR955	CdS	selenides	resists_MicroChem	
SPR650	PbS	CdSe	LOR_A	Phosphides
UVIII	ZnS	PbSe	LOR_B	Al(xx)GA(10)xx05
		ZnSe		In(05)P