

	Ex situ	Ex situ	In situ	In situ
Temperature [°C]	850	900	800	850
Silicon Thickness [nm]	48.8	49.1	49.0	49.1
Silicon SLD [r_e/A^3]	0.708	0.698	0.699	0.699
Silicon Roughness [nm]	0.8	0.7	0.8	0.7
Interfacial layer Thickness [nm]	0.6		0.5	
Interfacial layer SLD [r_e/A^3]	0.676		0.667	
Interfacial layer Roughness [nm]	0.3		0.3	
Substrate SLD [r_e/A^3]	0.717	0.717	0.717	0.717
Substrate Roughness [nm]	0.3	0.3	0.3	0.3

As Prepared	As Prepared		<i>ex situ</i> Annealed In Vacuum
	In Vacuum	In Air	
SiO ₂ -top Thickness [nm]		5.7	
SiO ₂ -top SLD [r_e/A^3]		0.603	
SiO ₂ -top Roughness [nm]		0.9	
Silicon Thickness [nm]	58.0	52.2	44.5
Silicon SLD [r_e/A^3]	0.629	0.708	0.703
Silicon Roughness [nm]	1	0.9	0.5
Interfacial layer Thickness [nm]	0.5	0.6	0.6
Interfacial layer SLD [r_e/A^3]	0.358	0.336	0.652
Interfacial layer Roughness [nm]	0.3	0.4	0.3
Substrate SLD [r_e/A^3]	0.717	0.717	0.717
Substrate Roughness [nm]	0.3	0.3	0.3

Temperature [°C]	50	200	300	350	400	450
Silicon Thickness [nm]	57.5	57.5	56.7	55.7	54.2	52.7
Silicon SLD [r_e/A^3]	0.632	0.627	0.635	0.638	0.645	0.664
Silicon Roughness [nm]	0.9	1	0.9	0.9	0.8	0.8
Interfacial layer Thickness [nm]	0.6	0.5	0.5	0.5	0.5	0.5
Interfacial layer SLD [r_e/A^3]	0.318	0.318	0.315	0.318	0.467	0.473
Interfacial layer Roughness [nm]	0.3	0.3	0.3	0.3	0.3	0.3
Substrate SLD [r_e/A^3]	0.717	0.717	0.717	0.717	0.717	0.717
Substrate Roughness [nm]	0.3	0.3	0.3	0.3	0.3	0.3

Method	DSP RTP	DSP RTP	DSP RTP	Long
Annealing Time [s]	2	25	200	Annealing
Silicon Thickness [nm]	48.0	48.2	47.8	4.9
Silicon SLD [r_e/A^3]	0.716	0.714	0.716	0.714
Silicon Roughness [nm]	0.8	0.7	0.7	0.8
Interfacial layer Thickness [nm]	0.5	0.5	0.5	0.6
Interfacial layer SLD [r_e/A^3]	0.643	0.646	0.694	0.676
Interfacial layer Roughness [nm]	0.3	0.3	0.3	0.3
Substrate SLD [r_e/A^3]	0.717	0.717	0.717	0.717
Substrate Roughness [nm]	0.3	0.3	0.3	0.3

500	550	600	700	800	850	900
50.5	49.5	49.1	49.0	49.0	49.1	48.5
0.668	0.691	0.695	0.691	0.699	0.699	0.706
0.6	0.7	0.7	0.7	0.8	0.7	0.7
0.5	0.5	0.5	0.5	0.5		
0.534	0.522	0.597	0.634	0.667		
0.5	0.5	0.3	0.3	0.3		
0.717	0.717	0.717	0.717	0.717	0.717	0.717
0.3	0.3	0.3	0.3	0.3	0.3	0.3

As Prepared	In Vacuum	In Air
SiO2-top Thick [nm]		5.7
SiO2-top Dens [FU/nm ³]		19.9
SiO2-top Sigma [nm]		0.9
Silicon Thick [nm]	58.0	52.2
Silicon Dens [FU/nm ³]	44.2	45.3
Silicon Sigma [nm]	1	0.9
SiO2-substrate Thick [nm]	0.5	0.6
SiO2-substrate Dens [FU/nm ³]	11.8	11.1
SiO2-substrate Sigma [nm]	0.3	0.4
Sub. Dens [FU/nm ³]	49.8	49.8
Sub Sigma [nm]	0.3	0.3

Temperature [°C]	50	200	300	350	400	450	500
Silicon Thick [nm]	57.5	57.5	56.7	55.7	54.2	52.7	50.5
Silicon Dens [FU/nm ³]	44.4	44	44.6	44.8	45.3	46.6	46.9
Silicon Sigma [nm]	0.9	1	0.9	0.9	0.8	0.8	0.6
SiO2-substrate Thick [nm]	0.6	0.5	0.5	0.5	0.5	0.5	0.5
SiO2-substrate Dens [FU/nm ³]	10.5	10.5	10.4	10.5	15.4	15.6	17.6
SiO2-substrate Sigma [nm]	0.3	0.3	0.3	0.3	0.3	0.3	0.5
Sub. Dens [FU/nm ³]	49.8	49.8	49.8	49.8	49.8	49.8	49.8
Sub Sigma [nm]	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Method	DSP RTP	DSP RTP	DSP RTP	Long
Annealing Time [s]	2	25	200	Annealing
Silicon Thick [nm]	48.0	48.2	47.8	4.9
Silicon Dens [FU/nm ³]	49.7	49.6	49.7	49.6
Silicon Sigma [nm]	0.8	0.7	0.7	0.8
SiO2-substrate Thick [nm]	0.5	0.5	0.5	0.6
SiO2-substrate Dens [FU/nm ³]	21.2	21.3	22.9	22.3
SiO2-substrate Sigma [nm]	0.3	0.3	0.3	0.3
Sub. Dens [FU/nm ³]	49.8	49.8	49.8	49.8
Sub Sigma [nm]	0.3	0.3	0.3	0.3

550	600	700	800	850	900
49.5	49.1	49.0	49.0	49.1	48.5
48.5	48.8	48.5	49.1	49.1	49.6
0.7	0.7	0.7	0.8	0.7	0.7
0.5	0.5	0.5	0.5		
17.2	19.7	20.9	22		
0.5	0.3	0.3	0.3		
49.8	49.8	49.8	49.8	49.8	49.8
0.3	0.3	0.3	0.3	0.3	0.3

	In Vacuum			In Air		
	HT 763-1	HT 763-2	HT 763-3	HT-763-1	HT-763-2	HT-763-3
SiO2-top Thick [A]				56.6	46.9	31.7
SiO2-top Dens [FU/A^3]				0.0199	0.0198	0.236
SiO2-top Sigma [A]				9	8	8
Mid Thick [A]	579.5	487.5	489.8	521.9	445.498	474.8
Mid Dens [FU/A^3]	0.0442	0.0497	0.0494	0.0453	0	0.0475
Mid Sigma [A]	10	8	8	9	5	6
SiO2-substrate Thick [A]	5.0	6.0	5	6	6	5
SiO2-substrate Dens [FU/A^3]	0.0118	0.0223	0.0216	0.0111	0.0215	0.0237
SiO2-substrate Sigma [A]	3	5	3	4	3	3
Sub. Dens [FU/A^3]	0.0498	0.0498	0.0498	0.0498	0.0498	0.0498
Sub Sigma [A]	3	3	3	3	3	3

<i>in situ</i> Annealed	50C	200C	300C	350C	400C	450C	500C
Mid Thick [A]	574.8	575.2	566.8	556.5	542.1	526.7	504.8
Mid Dens [FU/A^3]	0.0444	0.044	0.0446	0.0448	0.0453	0.0466	0.0469
Mid Sigma [A]	9	10	9	9	8	8	6
SiO2-substrate Thick [A]	6	5	5.0	5	5	5	5
SiO2-substrate Dens [FU/A^3]	0.0105	0.0105	0.0104	0.0105	0.0154	0.0156	0.0176
SiO2-substrate Sigma [A]	3	3	3	3	3	3	5
Sub. Dens [FU/A^3]	0.0498	0.0498	0.0498	0.0498	0.0498	0.0498	0.0498
Sub Sigma [A]	3	3	3	3	3	3	3

Method	DSP RTP	DSP RTP	DSP RTP	Long
Annealing Time [s]	2	25	200	Annealing
Mid Thick [A]	479.6	481.6	478.2	48.8
Mid Dens [FU/A^3]	0.0497	0.0496	0.0497	0.0496
Mid Sigma [A]	8	7	7	8
SiO2-substrate Thick [A]	5	5	5	6
SiO2-substrate Dens [FU/A^3]	0.0212	0.0213	0.0229	0.0223
SiO2-substrate Sigma [A]	3	3	3	3
Sub. Dens [FU/A^3]	0.0498	0.0498	0.0498	0.0498
Sub Sigma [A]	3	3	3	3

550C	600C	700C	800C	850C	900C
495.3	491.2	490.3	490.2	490.6	485.1
0.0485	0.0488	0.0485	0.0491	0.0491	0.0496
7	7	7	8	7	7
5	5	5	5		
0.0172	0.0197	0.0209	0.0220		
5	3	3	3		
0.0498	0.0498	0.0498	0.0498	0.0498	0.0498
3	3	3	3	3	3

Temperature [°C]	50	200
Mid Thick [Å]	574.8	575.2
Mid Dens [FU/Å ³]	0.0444	0.044
Mid Sigma [Å]	9	10
SiO2-substrate Thick [Å]	6	5
SiO2-substrate Dens [FU/Å ³]	0.0105	0.0105
SiO2-substrate Sigma [Å]	3	3
Sub. Dens [FU/Å ³]	0.0498	0.0498
Sub Sigma [Å]	3	3
I0 [-]	2.08	2.14
Resolution [dtheta]	0.0012	0.0012
Theta Offset [degrees]	0.0248	0.015
BeamWth [mm]	0.125	0.125
FOM Chi2		
FOM Chiabs	2.94	3.53
FOM Log		
	25.5	25.3
	0.1	0.1
Number of Electrons [au]	25.6	25.4
Errorbar Mid Thick down [Å]	-0.7	-0.9
Errorbar Mid Thick up [Å]	0.8	0.8
Errorbar Mid Dens down[FU/Å ³]	-0.0006	-0.0005
Errorbar Mid Dens up [FU/Å ³]	0.0007	0.0006
Errorbar SiO2-substrate Dens down [FU/Å ³]	-0.0007	-0.0007
Errorbar SiO2-substrate Dens up[FU/Å ³]	0.0009	0.0016
Errorbar SiO2 Thickness down		2
Errorbar SiO2 Thickness up		6
Errorbar Electrons down	0.35	0.29
Errorbar Electrons up	0.40	0.35

300	350	400	450	500
566.8	556.5	542.1	526.7	504.8
0.0446	0.0448	0.0453	0.0466	0.0469
9	9	8	8	6
5.0	5	5	5	5
0.0104	0.0105	0.0154	0.0156	0.0176
3	3	3	3	5
0.0498	0.0498	0.0498	0.0498	0.0498
3	3	3	3	3
2.15	2.12	2.05	2.085	2.043
0.027				
1.93	1.90	1.85	1.82	1.80
3.737	3.61	3.44	3.31	3.23
				0.0653
25.3	24.9	24.6	24.5	23.7
0.1	0.1	0.1	0.1	0.1
25.3	25.0	24.6	24.6	23.8
-1.9	-0.9	-0.6	-0.4	-1.2
0.8	0.4	1.7	1.9	1.4
-0.0007	-0.0006	-0.0005	-0.0009	-0.0006
0.0006	0.0006	0.0003	0.0004	0.0004
-0.0006	-0.0003	-0.0012	-0.0021	-0.0012
0.0011	0.0021	0.0003	0.0006	0.0011
0.41	0.34	0.27	0.48	0.31
0.34	0.34	0.18	0.23	0.21

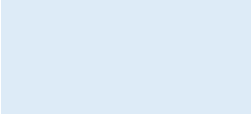
550	600	700	800	850
495.3	491.2	490.3	490.2	490.6
0.0485	0.0488	0.0485	0.0491	0.0491
7	7	7	8	7
5	5	5	5	
0.0172	0.0197	0.0209	0.0220	
5	3	3	3	
0.0498	0.0498	0.0498	0.0498	0.0498
3	3	3	3	3
2.016	2.04	2.04	1.998	1.176
0.015				
				0.066
1.64	2.71	2.02		
2.7	2.485			
		0.0305	0.0451	
24.0	24.0	23.8	24.1	24.1
0.1	0.1	0.1	0.1	0.0
24.1	24.1	23.9	24.2	24.1
Log				
-0.8	-0.6	-4	-7	-6
0.6	1.2	11	9	6
-0.0009	-0.0008	-0.0008	-0.0011	-0.0008
0.0004	0.0004	0.0005	0.0008	0.0008
-0.0008	-0.0006	-0.0004	-0.0002	
0.0008	0.0004	0.0004	0.0003	
0.45	0.40	0.44	0.64	0.49
0.20	0.21	0.59	0.59	0.49

900

485.1

0.0496

7

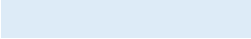


0.0498

3

0.885

0.0502



0.0383

24.1

0.0

24.1

-12

12

-0.0008

0.0008

0.71

0.71