

Reflectivity measurement - reference mirror before and after cleaning

Equipment:	uscan reflectometer		
Mirror:	Reference mirror		
Person:	Tibor Agocs		
Date:	24-26/07/2007		
Lambda (micron):	0.67		
Incident angle (degree):	25		
BW (Bandwidth) limits:	1	0.1	

BEFORE

No#	BSDF - 0°,0° detector position	BSDF - 50°,180° detector position	reflectivity	rms (Ångstrom)	time	date
1	1.93E-03	1.96E-03	0.962	29.8	11:00:29	07-24-1907
2	1.95E-03	1.97E-03	0.966	29.9	11:00:34	07-24-1907
3	1.96E-03	1.97E-03	0.949	30.3	11:00:38	07-24-1907
4	1.18E-02	9.27E-03	0.98	73	11:00:47	07-24-1907
5	1.19E-02	9.25E-03	0.974	73.5	11:00:52	07-24-1907
average	5.922E-03	4.883E-03	0.966	47.300		
standard dev	5.443E-03	3.996E-03	0.012	23.690		

AFTER1 measurements on the 25th of July

No#	BSDF - 0°,0° detector position	BSDF - 50°,180° detector position	reflectivity	rms (Ångstrom)	time	date
6	4.07E-03	1.72E-03	1.023	42.7	08:24:28	07-25-1907
7	4.09E-03	1.72E-03	1.034	42.7	08:24:33	07-25-1907
8	4.08E-03	1.72E-03	1.033	42.6	08:24:38	07-25-1907
9	3.16E-03	1.27E-03	0.984	38.6	08:24:51	07-25-1907
10	3.34E-03	1.30E-03	0.986	39.8	08:24:56	07-25-1907
11	3.42E-03	1.30E-03	0.987	40.3	08:25:01	07-25-1907
12	5.59E-03	1.80E-03	0.978	52.8	08:25:11	07-25-1907
13	5.80E-03	1.80E-03	0.977	54	08:25:15	07-25-1907
14	5.84E-03	1.80E-03	0.98	54.2	08:25:20	07-25-1907
15	4.79E-03	2.22E-03	0.966	47.5	08:25:35	07-25-1907
16	4.89E-03	2.23E-03	0.969	47.9	08:25:40	07-25-1907
17	4.93E-03	2.21E-03	0.974	48	08:25:45	07-25-1907
18	4.64E-03	1.30E-03	0.969	49.3	08:25:56	07-25-1907
19	4.60E-03	1.29E-03	0.975	49	08:26:01	07-25-1907
average	4.517E-03	1.691E-03	0.988	46.386		
standard dev	8.743E-04	3.582E-04	0.024	5.293		

AFTER1 - without the first three measurements

No#	BSDF - 0°,0° detector position	BSDF - 50°,180° detector position	reflectivity	rms (Ångstrom)	time	date
9	3.16E-03	1.27E-03	0.984	38.6	08:24:51	07-25-1907
10	3.34E-03	1.30E-03	0.986	39.8	08:24:56	07-25-1907
11	3.42E-03	1.30E-03	0.987	40.3	08:25:01	07-25-1907
12	5.59E-03	1.80E-03	0.978	52.8	08:25:11	07-25-1907
13	5.80E-03	1.80E-03	0.977	54	08:25:15	07-25-1907
14	5.84E-03	1.80E-03	0.98	54.2	08:25:20	07-25-1907
15	4.79E-03	2.22E-03	0.966	47.5	08:25:35	07-25-1907

16	4.89E-03	2.23E-03	0.969	47.9	08:25:40	07-25-1907
17	4.93E-03	2.21E-03	0.974	48	08:25:45	07-25-1907
18	4.64E-03	1.30E-03	0.969	49.3	08:25:56	07-25-1907
19	4.60E-03	1.29E-03	0.975	49	08:26:01	07-25-1907
average	4.636E-03	1.684E-03	0.977	47.400		
standard dev	9.596E-04	4.081E-04	0.007	5.580		

AFTER2 measurements on the 26th of July

No#	BPDF - 0°,0° detector position	BPDF - 50°,180° detector position	reflectivity	rms (Ångstrom)	time	date
20	2.76E-03	1.71E-03	0.964	35.6	08:48:49	07-26-1907
21	2.76E-03	1.70E-03	0.964	35.6	08:48:54	07-26-1907
22	2.75E-03	1.70E-03	0.964	35.6	08:49:00	07-26-1907
23	5.86E-03	3.13E-03	0.966	52.1	08:49:13	07-26-1907
24	5.84E-03	3.10E-03	0.97	51.9	08:49:17	07-26-1907
25	5.86E-03	3.08E-03	0.973	51.9	08:49:22	07-26-1907
26	2.93E-03	1.10E-03	0.978	37.5	08:49:34	07-26-1907
27	2.95E-03	1.10E-03	0.984	37.6	08:49:38	07-26-1907
28	2.97E-03	1.10E-03	0.985	37.7	08:49:43	07-26-1907
29	4.39E-03	1.97E-03	0.966	45.5	08:50:00	07-26-1907
30	4.37E-03	1.96E-03	0.97	45.3	08:50:05	07-26-1907
31	4.38E-03	1.96E-03	0.968	45.4	08:50:09	07-26-1907
average	3.985E-03	1.966E-03	0.971	42.642		
standard dev	1.305E-03	7.594E-04	0.008	6.801		

Notes:

RMS - Root Mean Square surface roughness in Angstrom,

BPDF - Bidirectional scatter distribution function, it is equal to the scattered power per unit solid angle normalized by the incident power and $\cos\theta$