

Authors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks
				Film	X-tal	Bulk	Prep		
VKF73	0.5-6	Refl				x	EP, Sput	R; KK: $\sigma$	surface roughness resulting in plasmon-related artifact
We0177	0.2-8	Refl	4.2, 300			x	EP, Ex	R; KK: $\sigma$	absorptivity measured calorimetry for $h\nu < 4.4$ eV, reflectivity measured with synchrotron radiation for $2.5 < h\nu < 30$ eV
W0177	80-150	Trans		x				$\mu$	optical absorption measurements, synchrotron radiation
CDG78	64-130	Trans		x				$\mu$ (absorption measurements); KK: $\mu$ (energy loss spectroscopy), $\text{Im}(\epsilon^{-1})$	optical absorption measurements with synchrotron radiation; fast energy loss spectroscopy with KK analysis
AN79	2-5	Refl		x	x			R; KK: $\sigma$	sample preparations varied
CGW80	2-160	Trans		x				$\mu$	fast electron energy loss spectroscopy

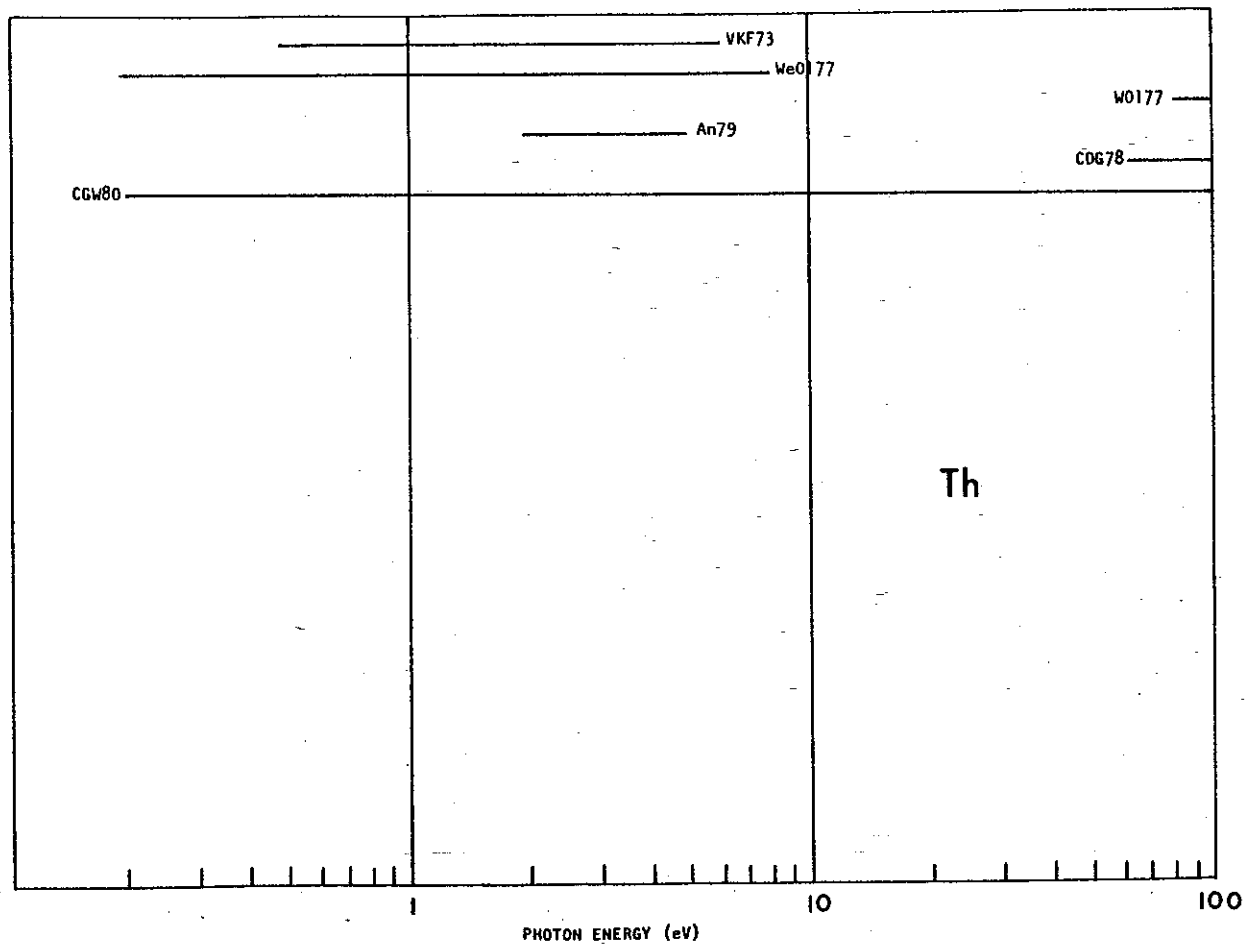


Fig. 94 Survey of available data on Th.

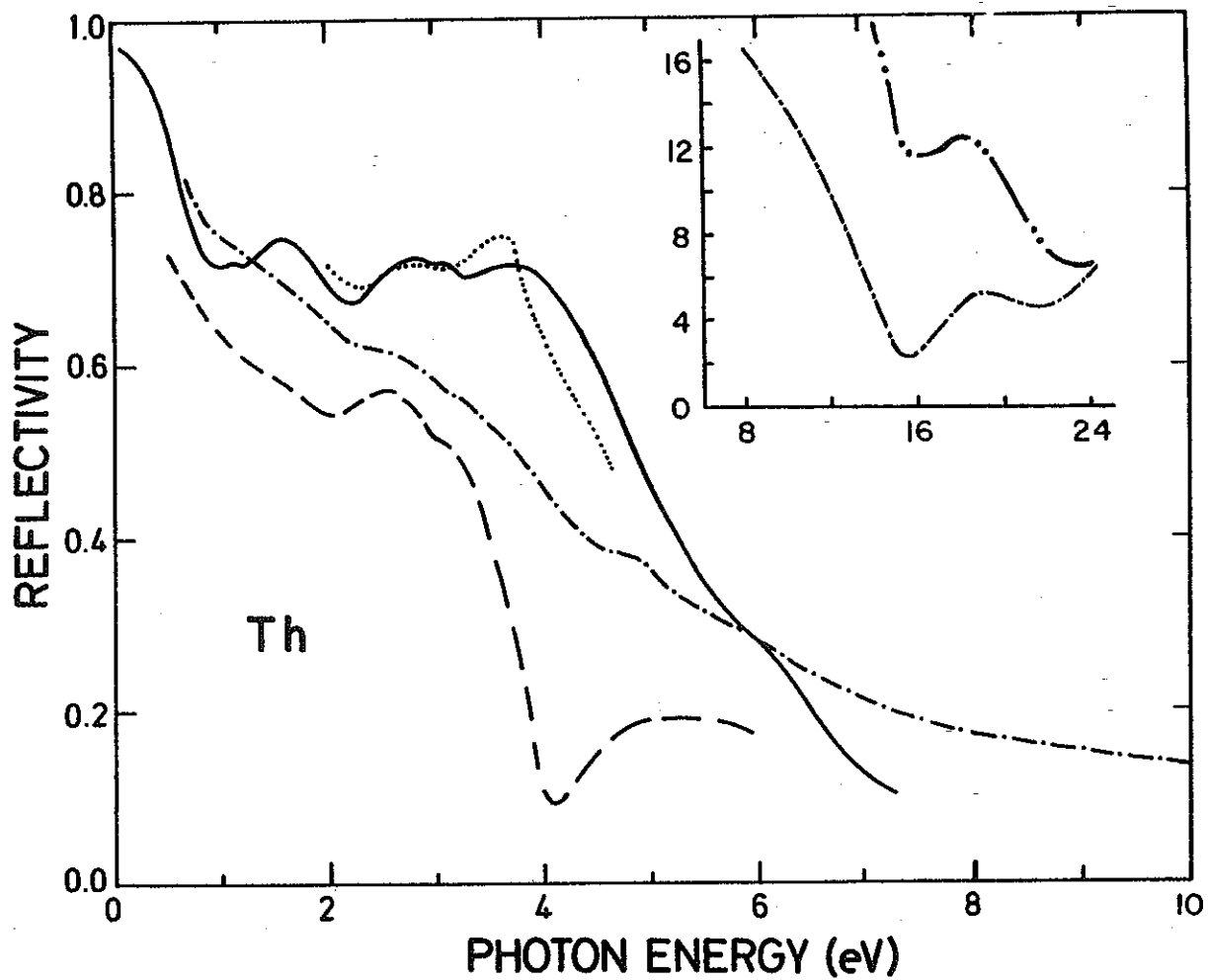


Fig. 95 Reflectivity for Th. Results by W077 (—); VKF73 (---); AN79 (···); and FN80 (-.-). Results by CGW80 (-.-.-) derived from electron energy loss measurements.

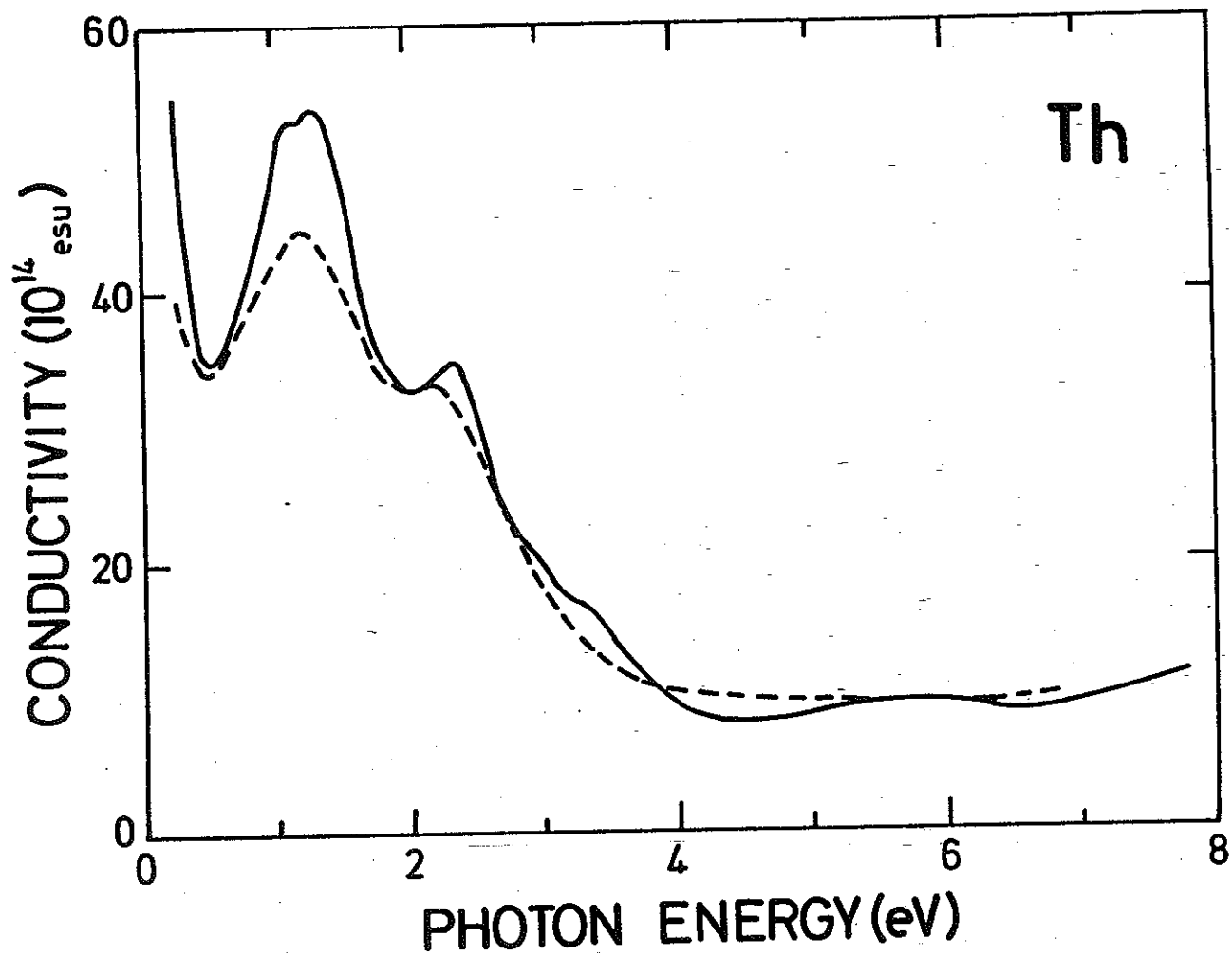


Fig. 96 Optical conductivity for Th. Results by W077 (—); and AN79 (---).

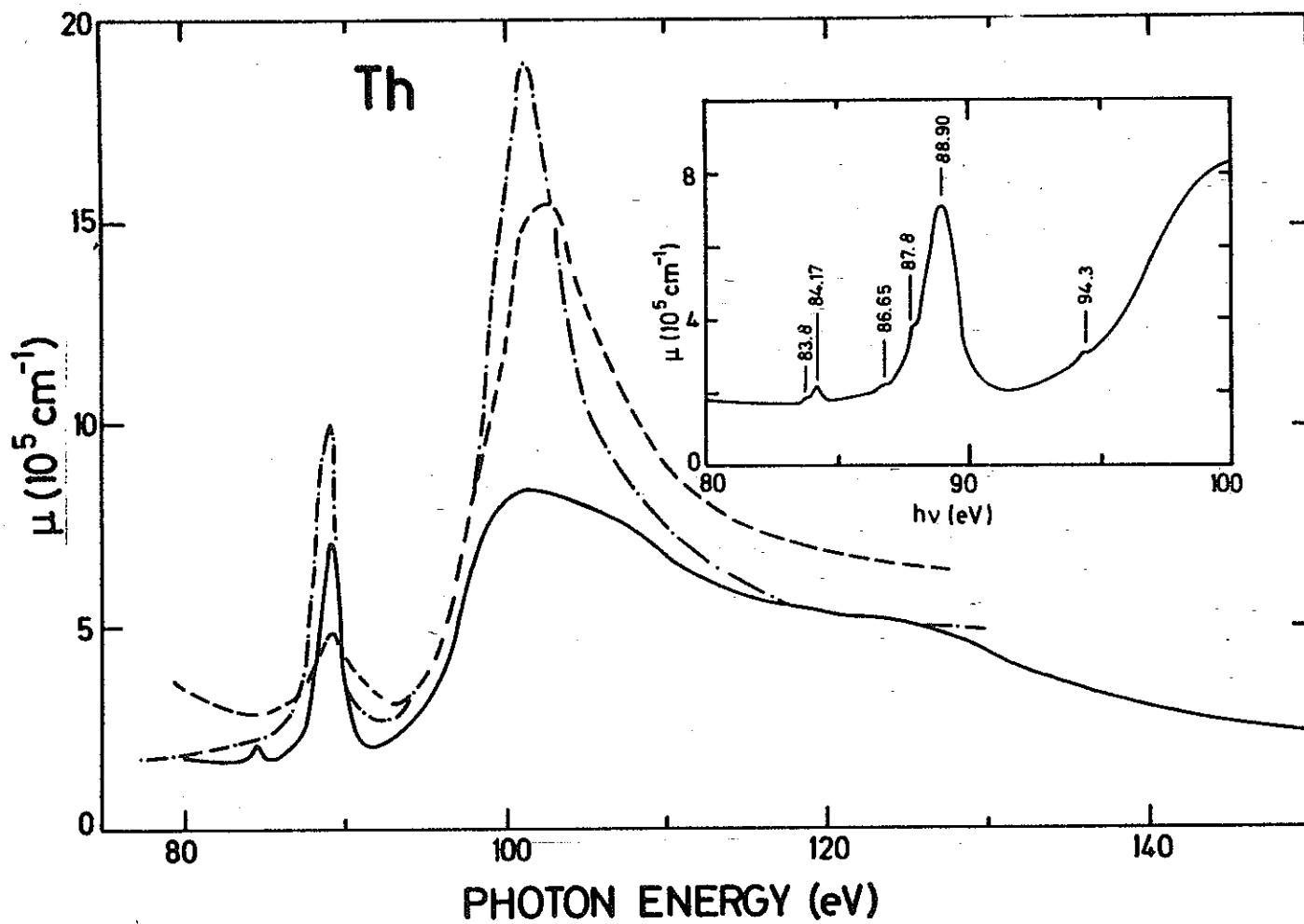


Fig. 97 Absorption coefficient for Th for  $80 \leq h\nu \leq 150$  eV. Results by W077 (—); CDG78 (---) derived from electron energy loss measurements and CDG78 (-·-) from soft x-ray absorption measurements.

Thorium

publication by J.H. Weaver and C.G. Olson in Phys. Rev. B 15, 4602 (1977)  
 based on the following tabulation

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\epsilon)$	$R(\phi=0)$
0.10	-1392.69	1472.08	17.80	41.35	0.00	.965
0.12	-1107.83	998.54	13.85	36.05	0.00	.964
0.14	-904.59	702.27	10.97	32.01	0.00	.962
0.16	-737.83	512.76	9.96	28.60	0.00	.961
0.18	-609.65	386.45	7.49	25.60	0.00	.959
0.20	-507.88	296.76	6.34	23.41	0.00	.958
0.25	-332.91	175.50	4.66	18.83	0.00	.952
0.30	-228.43	117.46	3.77	15.58	0.00	.943
0.35	-162.20	90.75	3.44	13.19	0.00	.929
0.40	-120.93	73.56	3.21	11.46	0.00	.914
0.45	-91.80	64.13	3.18	10.09	0.01	.893
0.50	-72.54	56.10	3.10	9.06	0.01	.875
0.55	-56.88	51.08	3.13	8.16	0.01	.850
0.60	-45.54	47.74	3.20	7.47	0.01	.826
0.65	-37.02	45.37	3.28	6.91	0.01	.802
0.70	-30.59	43.59	3.37	6.47	0.02	.779
0.75	-25.57	42.39	3.46	6.13	0.02	.759
0.80	-22.15	41.29	3.52	5.87	0.02	.744
0.85	-18.87	40.55	3.60	5.64	0.02	.729
0.90	-16.91	40.34	3.66	5.51	0.02	.719
0.95	-15.70	40.17	3.70	5.42	0.02	.713
1.00	-15.32	39.99	3.71	5.39	0.02	.711
1.05	-15.62	39.57	3.67	5.39	0.02	.712
1.10	-16.61	38.47	3.56	5.41	0.02	.716
1.15	-17.04	36.68	3.42	5.36	0.02	.717
1.20	-16.84	35.19	3.33	5.28	0.02	.715
1.25	-17.10	34.12	3.25	5.26	0.02	.716
1.30	-17.81	32.90	3.13	5.26	0.02	.720
1.35	-18.66	31.22	2.97	5.25	0.02	.725
1.40	-19.13	29.33	2.82	5.20	0.02	.729
1.45	-19.63	27.28	2.64	5.15	0.02	.735
1.50	-19.77	25.09	2.47	5.09	0.02	.739
1.55	-19.73	22.73	2.28	4.99	0.03	.745
1.60	-19.05	20.46	2.11	4.85	0.03	.746
1.65	-18.04	18.58	1.98	4.69	0.03	.743
1.70	-16.93	17.09	1.89	4.53	0.03	.738
1.75	-15.61	15.93	1.82	4.37	0.03	.731
1.80	-14.77	14.91	1.76	4.23	0.03	.724
1.85	-13.53	14.55	1.78	4.09	0.04	.709
1.90	-13.17	14.00	1.74	4.03	0.04	.706
1.95	-12.45	13.40	1.71	3.92	0.04	.699
2.00	-11.76	13.02	1.70	3.83	0.04	.690
2.05	-11.24	12.73	1.69	3.76	0.04	.683
2.10	-10.78	12.51	1.69	3.69	0.05	.676
2.15	-10.44	12.40	1.70	3.65	0.05	.670
2.20	-10.31	12.24	1.69	3.63	0.05	.669
2.25	-10.20	12.07	1.67	3.61	0.05	.668
2.30	-10.23	11.92	1.65	3.60	0.05	.669
2.35	-10.46	11.63	1.61	3.61	0.05	.675

Th

-225-

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\epsilon)$	$R(\phi=0)$
2.40	-10.70	11.15	1.54	3.62	0.05	.684
2.45	-10.68	10.50	1.46	3.61	0.05	.694
2.50	-10.92	9.73	1.36	3.57	0.05	.703
2.55	-10.75	8.99	1.28	3.52	0.05	.709
2.60	-10.51	8.34	1.21	3.46	0.05	.713
2.65	-10.24	7.72	1.14	3.39	0.05	.717
2.70	-9.89	7.17	1.08	3.33	0.05	.720
2.75	-9.53	6.70	1.03	3.25	0.05	.720
2.80	-9.17	6.28	0.99	3.18	0.05	.720
2.85	-8.81	5.92	0.95	3.12	0.05	.719
2.90	-8.47	5.63	0.92	3.05	0.05	.717
2.95	-8.18	5.36	0.89	3.00	0.06	.715
3.00	-7.91	5.09	0.87	2.94	0.06	.715
3.05	-7.65	4.81	0.83	2.89	0.06	.715
3.10	-7.36	4.55	0.80	2.83	0.06	.715
3.15	-7.05	4.35	0.79	2.77	0.06	.711
3.20	-6.78	4.20	0.77	2.72	0.07	.706
3.25	-6.55	4.07	0.76	2.67	0.07	.702
3.30	-6.38	3.95	0.75	2.63	0.07	.700
3.35	-6.24	3.79	0.73	2.60	0.07	.701
3.40	-6.10	3.59	0.70	2.57	0.07	.705
3.50	-5.76	3.19	0.64	2.48	0.07	.710
3.60	-5.38	2.83	0.59	2.39	0.08	.714
3.70	-4.99	2.50	0.54	2.30	0.08	.716
3.80	-4.57	2.23	0.51	2.20	0.09	.714
3.90	-4.18	2.01	0.48	2.10	0.09	.709
4.00	-3.80	1.84	0.46	2.00	0.10	.701
4.10	-3.43	1.72	0.45	1.91	0.12	.686
4.20	-3.12	1.64	0.45	1.82	0.13	.668
4.30	-2.84	1.54	0.44	1.74	0.15	.655
4.40	-2.56	1.49	0.45	1.66	0.17	.631
4.50	-2.32	1.42	0.45	1.59	0.19	.611
4.60	-2.07	1.39	0.46	1.51	0.22	.583
4.70	-1.86	1.38	0.48	1.45	0.26	.552
4.80	-1.68	1.36	0.49	1.39	0.29	.526
4.90	-1.50	1.38	0.52	1.33	0.33	.490
5.00	-1.37	1.38	0.54	1.28	0.37	.465
5.10	-1.24	1.38	0.55	1.24	0.40	.440
5.20	-1.13	1.37	0.57	1.20	0.44	.418
5.30	-1.02	1.36	0.58	1.17	0.47	.396
5.40	-0.92	1.35	0.60	1.13	0.50	.377
5.50	-0.84	1.34	0.61	1.10	0.54	.359
5.60	-0.75	1.32	0.62	1.07	0.57	.340
5.70	-0.67	1.31	0.63	1.04	0.60	.323
5.80	-0.61	1.30	0.64	1.01	0.63	.308
5.90	-0.55	1.28	0.65	0.99	0.66	.296
6.00	-0.49	1.26	0.65	0.96	0.69	.284
6.10	-0.43	1.23	0.66	0.93	0.73	.271
6.20	-0.37	1.19	0.66	0.90	0.77	.257
6.30	-0.30	1.16	0.67	0.86	0.81	.241
6.40	-0.23	1.13	0.68	0.83	0.85	.225
6.50	-0.16	1.11	0.69	0.80	0.89	.208
6.60	-0.07	1.09	0.72	0.76	0.91	.188
6.70	0.00	1.09	0.74	0.74	0.92	.173
6.80	0.07	1.08	0.76	0.71	0.92	.158
6.90	0.14	1.09	0.79	0.69	0.90	.142
7.00	0.19	1.11	0.81	0.68	0.88	.135

Th

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\tilde{\epsilon})$	$R(\phi=0)$
7.10	0.24	1.11	0.83	0.67	0.86	.126
7.20	0.28	1.12	0.85	0.66	0.84	.120
7.30	0.32	1.13	0.86	0.65	0.82	.113
7.40	0.36	1.13	0.88	0.64	0.80	.108
7.50	0.40	1.15	0.90	0.64	0.78	.104
7.60	0.43	1.16	0.91	0.64	0.76	.102
7.70	0.45	1.17	0.93	0.63	0.74	.099
7.80	0.47	1.18	0.94	0.63	0.73	.097
7.90	0.50	1.20	0.95	0.63	0.71	.096
8.00	0.51	1.21	0.96	0.63	0.70	.095