

Authors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks
				Film	X-tal	Bulk	Prep		
Rob59	0.47-3.4	Ellips	RT, 1100, 1600			x	EP	$n, k, \epsilon_1, \epsilon_2$	
LFJ64	7.1-23.6	Ref1				x	Heat	R	heated in situ $\sim 10^{-9}$ Torr
TSV65	2.66-17.6		1800, 2150 2520			x	Heat	$n, k$	thermal emission, plotted data is at $T = 1800$ K
AU66	$\sim 2.5-55$	Ref1	$\sim 2000$			x	Heat	$Im(\epsilon^{-1})$	energy loss spectroscopy
Ba66	0.6-2.6	Ellips	300-2400			x	Heat	$n, k$	sample: cross-section filaments at various T
LP66	0.16-2.5	Ellips				x	MP	$n, k, A$	mechanically polished sinter samples
LT66	0.06-0.25	Ellips				x	MP	$\epsilon_2/\lambda, \epsilon_1$	
LTA66	0.1-3.5	Ellips				x	MP	$\epsilon_2/\lambda, \epsilon_1$	
Le67	0.1-4	Ellips				x	MP	$\epsilon_2/\lambda$	data from LT66 and LTA66
JLM68	2.1-23.1	m- $\theta$				x	Heat	$R, n, k, \epsilon_1, \epsilon_2, Im(\epsilon^{-1})$	heat $\sim 2800$ K at $\sim 10^{-9}$ Torr
CM69	2-3.26	Ellips			x		In	$n, k$	heated 2200 K; LEED characterization (1
HRS69	30-600	Trans		x			Ex	$\mu$	optical absorption measurements with synchrotron radiation
Kon69								$\epsilon$	emissivity
LCS70	0.31-3.1		1200-2600			x		$\epsilon$	emissivity

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				Film	X-tal	Bulk	Prep		
Vuj70								$\epsilon$ emissivity	
CM71	1.9-3.18	Ellips			x		Heat	$n, k, \epsilon_1, \epsilon_2$ table $\lambda, n, k$ ; heat 2200-2600 K; LEED characterization	
Hu71	6.2-41.3	Ref1		x			Ex	R	
NKN71	0.06-4.9	Ellips			x		EP	$n, k, \sigma, A, \epsilon_1, \epsilon_2$	
UKK71	1-12	Ref1			x		Heat	R; KK: $\epsilon_1, \epsilon_2$ $\sim 1700$ K in situ	
CHR72	6.2-41.3	Ref1		x			Ex	R substrate T: 313-773 K, plotted data for T = 313 K, transmission = 15.3%, and film thickness = 120 Å	
LCS72	0.25-4.13		1200-2600			x		$\epsilon_N$ emissivity	
NKN72	0.3-4.1	Ellips	77		x		EP	$n, k, \sigma$	
Rod72	1.13-1.77		1700-2300					$\epsilon$ emissivity	
Sm72	1.96, 2.27	Ellips	$\sim 280-2100$		x		In	$n, k$ sputter-anneal; characterize with AES	
Aks74	0.12-1.24		373-773					$\epsilon_N$ emissivity	
Zho74			>1000					$\epsilon$ emissivity	

Authors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks  W
				Film	X-tal	Bulk	Prep		
WOL75	0.15-33	Ref1	4.2 K $\leq$ 4.4 eV 300 K $>$ 4.4 eV			x	EP	R,A; KK: $\epsilon_1, \epsilon_2,$ $\text{Im}(\epsilon^{-1}), \text{Im}(\epsilon+1)^{-1}$	absorptivity measured by calorimetry fo hv < 4.4 eV, reflectivity measured for hv > 4 eV with synchrotron radiaton
HR76	0.25-3.1		<3300					$\epsilon$	emissivity
TT76	0.5-5	Ellips	4.2			x	Heat	$\epsilon_2$	heat $\sim$ 2000 K in uhv
W076	20-250	Trans		x			Ex	$\mu$	optical absorption measurements with synchrotron radiation
HTT77	0.5-5	Ellips	4.2-1100	x			Heat	$\epsilon_2, \epsilon_N$	also emissivity; heat to $\sim$ 2000 K in sit
GS77			773	x				$\epsilon$	emissivity
GCS79	0.32-5.6	Trans, Ref1		x			In	$\sigma$	evaporation in situ in uhv
NC80	0.5-6.5	Trans, Ref1				x	Ex	n,k, $\sigma$	polycrystalline thin films, substrate T: 1423-1273 K
NCC80	0.5-6.5	Trans, Ref1		x			Ex	$\sigma$	examined dependence of R on substrate temperature
WSG80			340-1260		x			$\epsilon_H$	calorimetric; emissivity

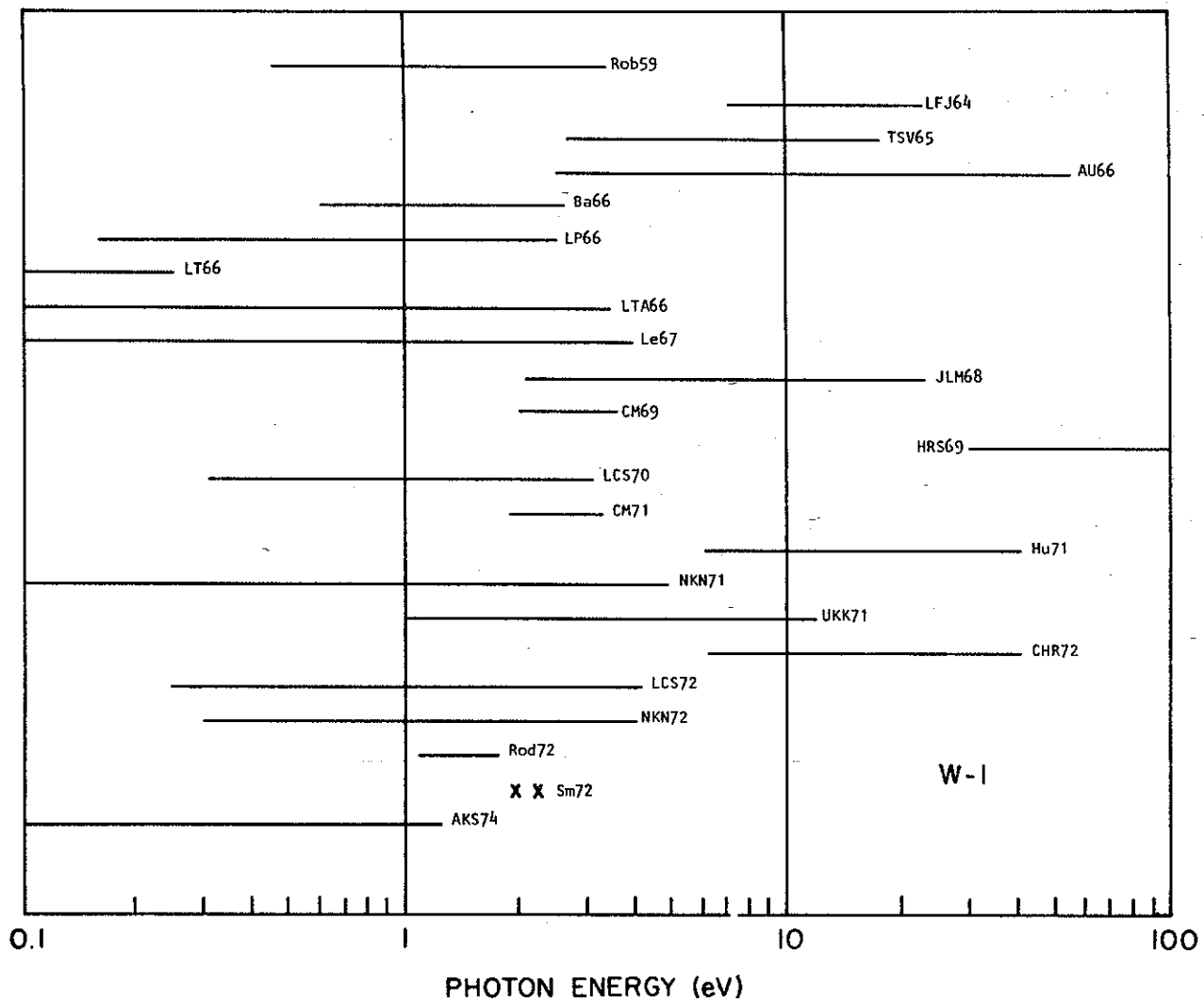


Fig. 78 Survey of available data for W

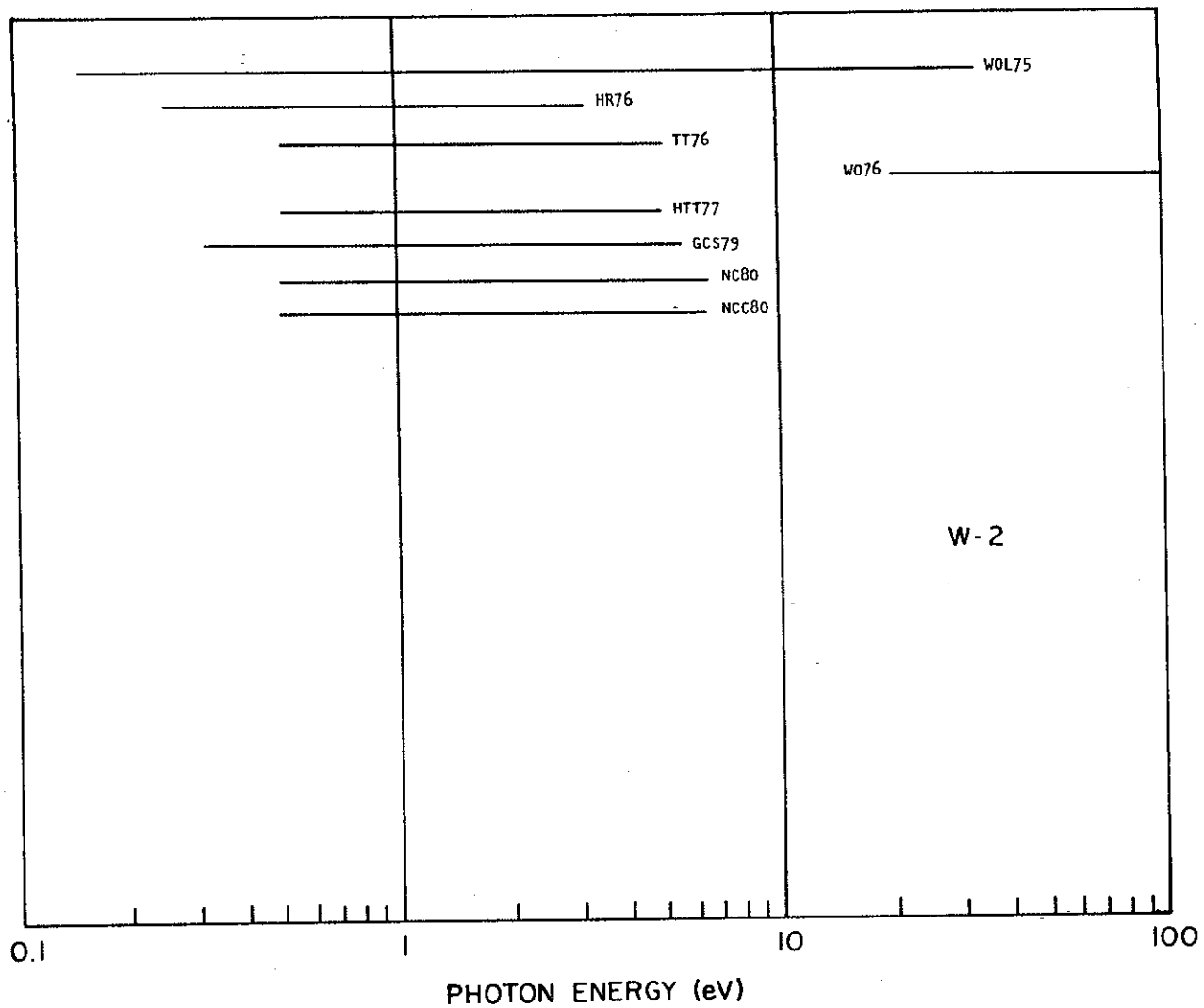


Fig. 78 Survey of available data for W

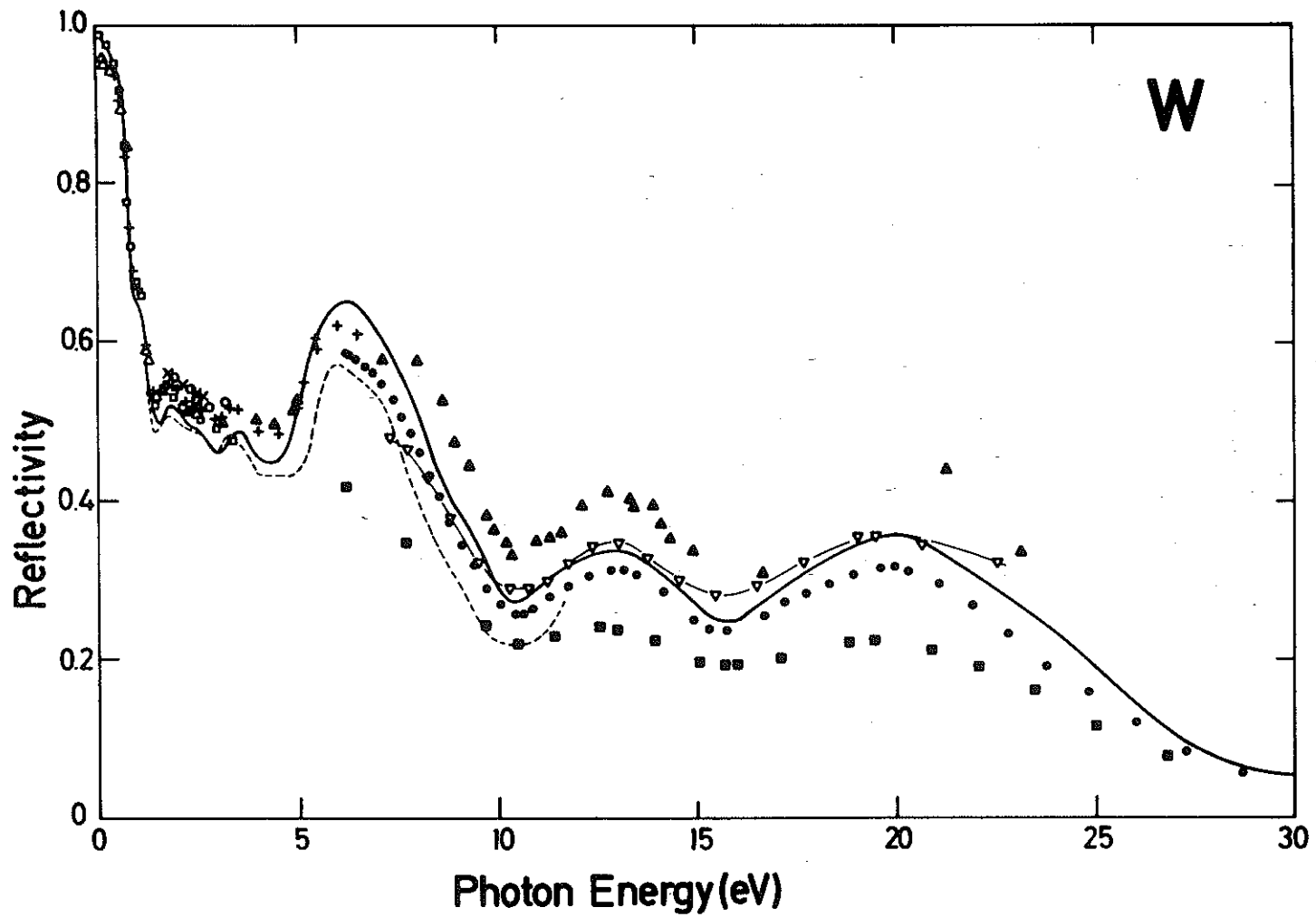


Fig. 79 Reflectivity of W. — WL075; xxx TSV65; +++ NC80; --- UKK71;  
 ooo CM71; ■■■ CHR72; ▲▲▲ JLM68; ΔΔΔ LP66; □□□ NKN71; ●●● Hu71;  
 ∇∇∇ LFJ64.

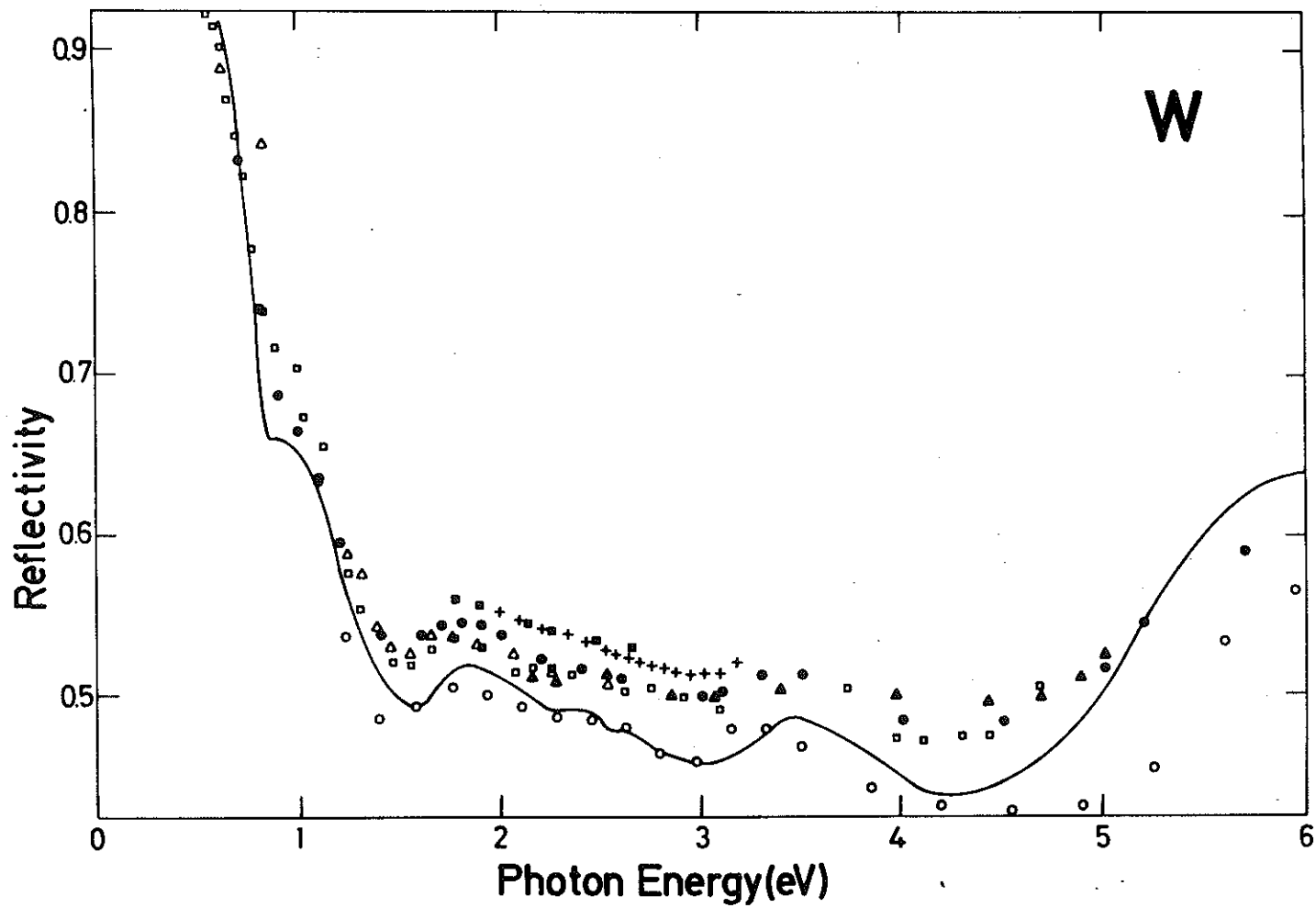


Fig. 80 Reflectivity of W for  $0 \leq h\nu \leq 6$  eV. — WL075; □□ NKN71;  
 ΔΔ LP66; ▲▲ JLM72; +++ CM71; ●● NC80; ○○○ UKK71; ■■■ TSV65.

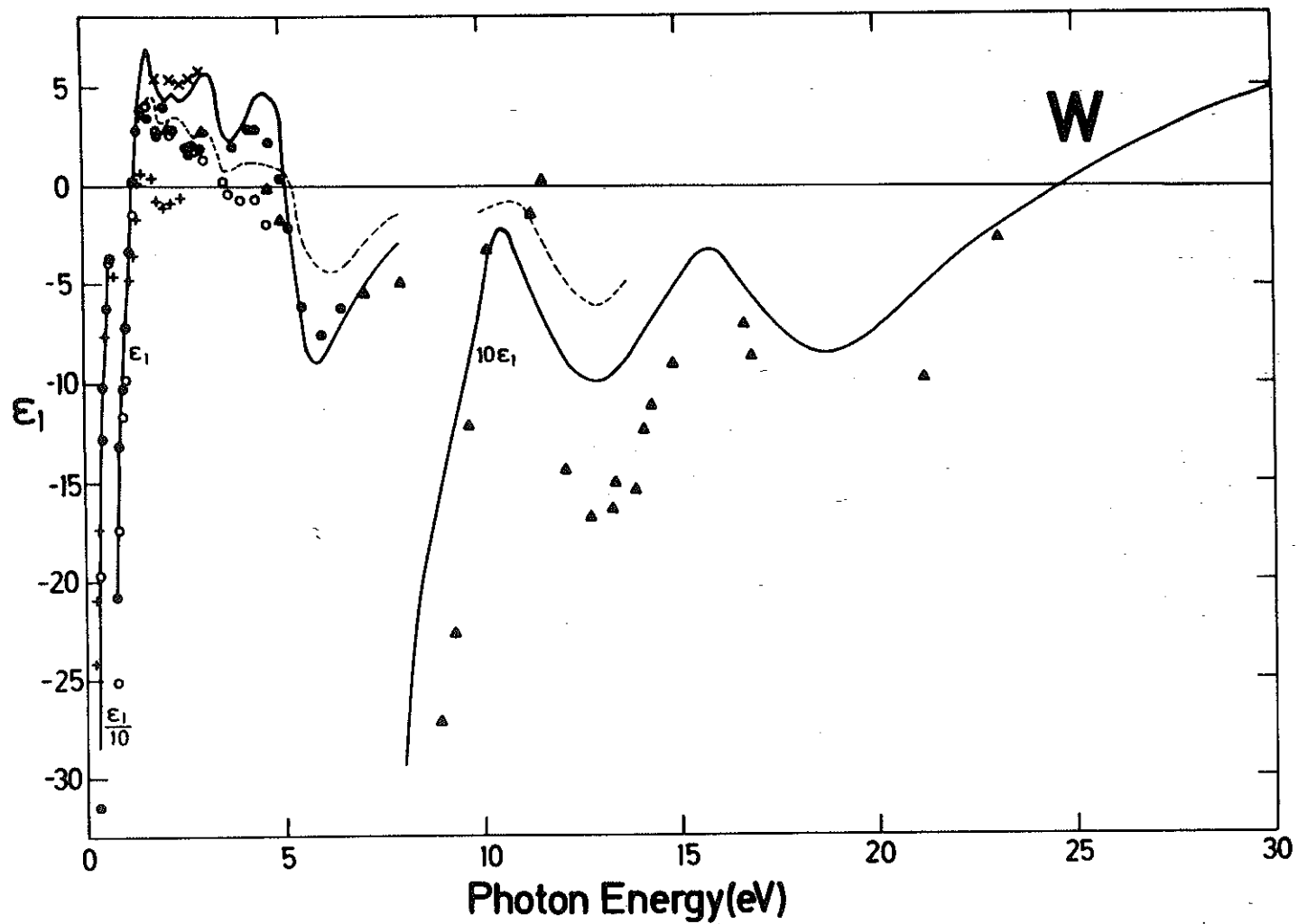


Fig. 81  $\epsilon_1$  for W. — WL075; --- UKK71; ●●● NC80; xxx CM71; ▲▲▲ JLM68; +++ LP66; ○○○ NKN71.



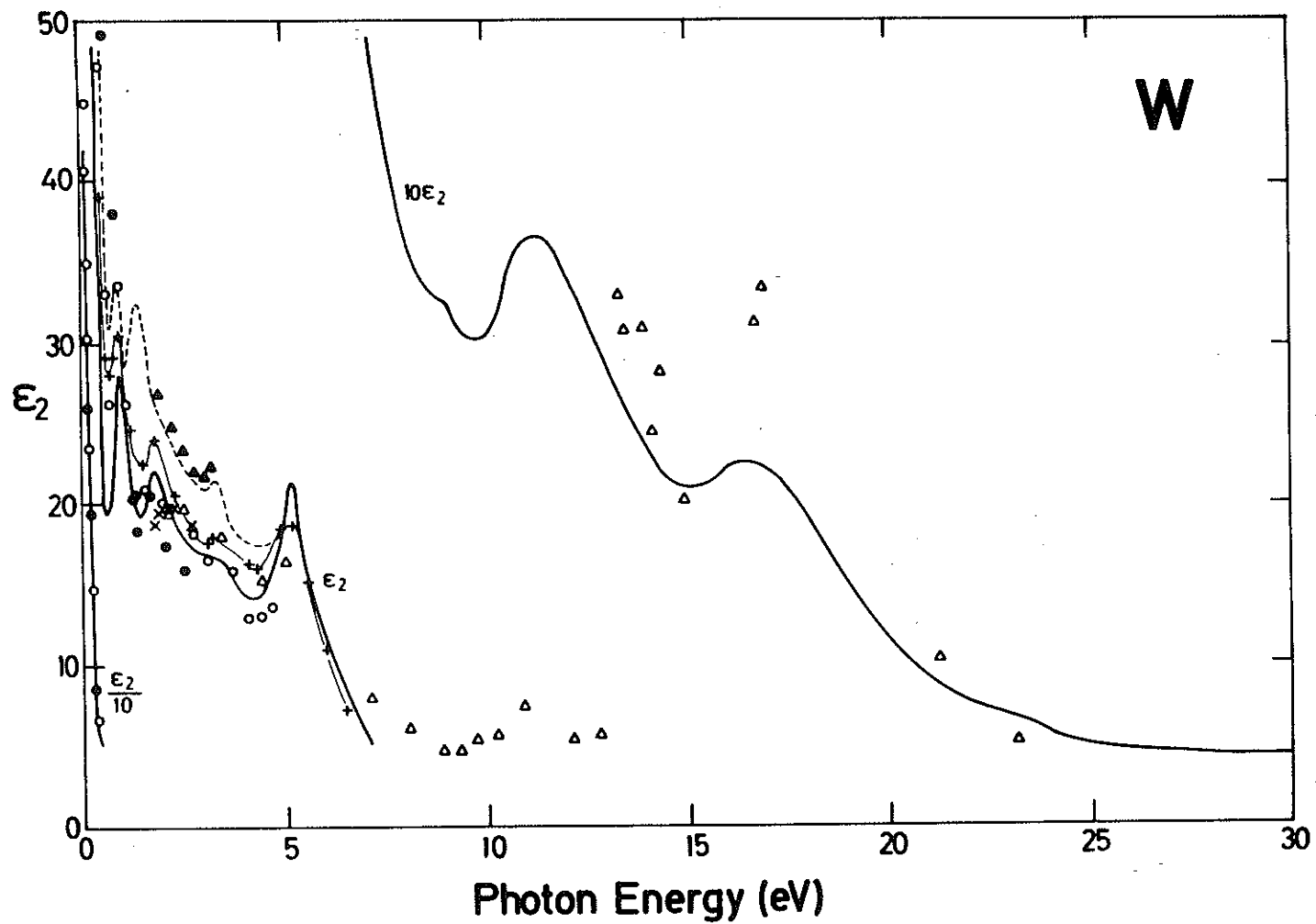


Fig. 82  $\epsilon_2$  for W. — WL075; xxx TSV65; --- TT76; +++ NC80; ▲▲▲ CM71; △△△ JLM68; ●●● LP66; ooo NKN71.

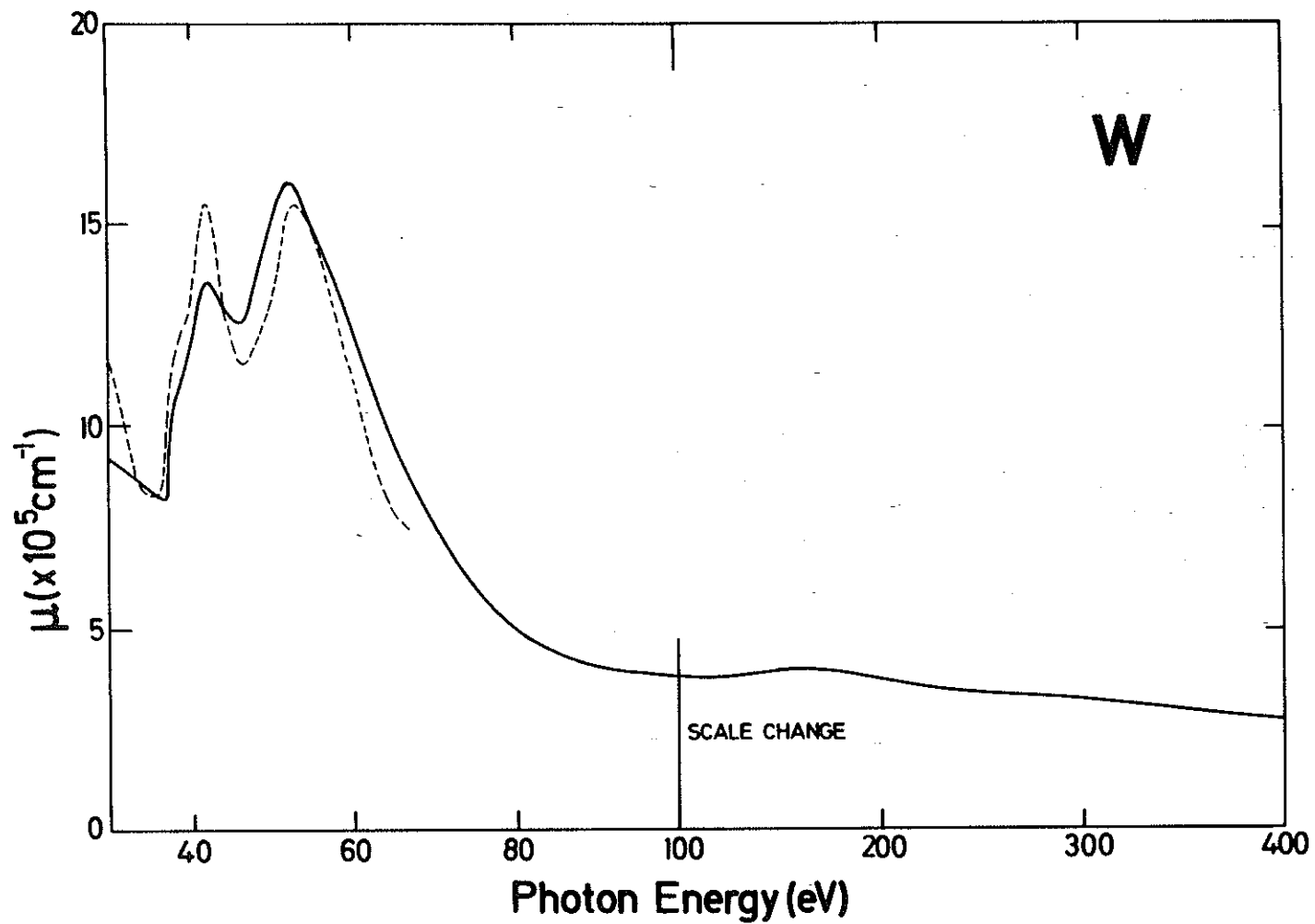


Fig. 83 Absorption coefficient for W. — HRS69; --- W076.

## Tungsten

publication by J.H. Weaver, D.W. Lynch, and C.G. Olson in Phys. Rev. B 12,  
1293 (1975) based on the following tabulation

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\epsilon)$	R(=0)
0.06	-5684.92	5713.94	34.46	82.90	0.00	.983
0.07	-4752.86	3910.33	26.48	73.85	0.00	.983
0.08	-3956.81	2771.62	20.91	65.29	0.00	.983
0.09	-3305.88	2040.25	17.01	59.96	0.00	.983
0.10	-2795.56	1538.09	14.06	54.71	0.00	.983
0.12	-2049.44	937.37	10.10	46.38	0.00	.982
0.14	-1555.35	608.45	7.58	40.16	0.00	.982
0.16	-1212.35	417.97	5.92	35.32	0.00	.982
0.18	-967.62	297.27	4.72	31.46	0.00	.982
0.20	-785.64	219.03	3.87	28.30	0.00	.981
0.25	-497.24	114.72	2.56	22.44	0.00	.980
0.30	-332.28	67.10	1.83	18.32	0.00	.979
0.32	-283.67	58.10	1.72	16.93	0.00	.977
0.34	-243.85	53.68	1.71	15.71	0.00	.973
0.36	-212.76	53.47	1.82	14.70	0.00	.967
0.38	-189.11	51.59	1.86	13.88	0.00	.963
0.40	-170.02	51.26	1.94	13.18	0.00	.957
0.42	-155.81	48.43	1.92	12.63	0.00	.954
0.44	-143.25	44.13	1.82	12.11	0.00	.953
0.46	-131.49	39.12	1.69	11.59	0.00	.952
0.48	-120.01	33.97	1.53	11.06	0.00	.952
0.50	-108.67	29.50	1.40	10.52	0.00	.952
0.52	-97.84	26.00	1.30	9.98	0.00	.950
0.54	-87.71	23.24	1.23	9.45	0.00	.948
0.56	-78.40	21.49	1.20	8.94	0.00	.943
0.58	-69.90	19.85	1.17	8.44	0.00	.938
0.60	-61.88	19.27	1.21	7.96	0.00	.929
0.62	-54.96	19.33	1.28	7.52	0.01	.917
0.64	-49.08	19.41	1.36	7.14	0.01	.904
0.66	-43.88	19.63	1.45	6.78	0.01	.888
0.68	-39.34	19.61	1.52	6.45	0.01	.873
0.70	-35.02	19.50	1.59	6.13	0.01	.856
0.72	-30.82	19.78	1.70	5.81	0.01	.834
0.74	-27.13	20.23	1.83	5.52	0.02	.810
0.76	-23.86	20.76	1.97	5.27	0.02	.785
0.78	-20.97	21.37	2.12	5.04	0.02	.759
0.80	-18.60	21.55	2.22	4.81	0.03	.738
0.82	-15.67	21.75	2.36	4.61	0.03	.710
0.83	-13.90	22.11	2.47	4.47	0.03	.692
0.84	-12.22	22.94	2.62	4.17	0.03	.674
0.85	-10.89	24.21	2.80	4.13	0.03	.662
0.86	-10.54	25.49	2.92	4.37	0.03	.661
0.87	-10.33	26.33	3.00	4.39	0.03	.660
0.88	-10.20	26.93	3.05	4.42	0.03	.660
0.90	-10.04	27.66	3.11	4.44	0.03	.660
0.92	-9.90	27.96	3.14	4.45	0.03	.660
0.94	-9.70	27.97	3.15	4.43	0.03	.658
0.96	-9.50	27.77	3.15	4.41	0.03	.656
0.98	-9.14	27.45	3.15	4.36	0.03	.653

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\epsilon)$	$R(\phi=0)$
1.00	-8.80	27.11	3.14	1.32	0.03	.649
1.05	-7.91	26.04	3.11	4.19	0.04	.639
1.10	-7.00	24.63	3.05	4.04	0.04	.627
1.15	-5.51	23.15	3.02	3.83	0.04	.608
1.20	-4.23	21.88	3.00	3.64	0.04	.590
1.25	-2.23	20.68	3.05	3.39	0.05	.563
1.30	-0.76	20.18	3.12	3.24	0.05	.545
1.35	0.78	19.63	3.20	3.07	0.05	.527
1.40	2.07	19.44	3.29	2.96	0.05	.515
1.45	3.30	19.28	3.38	2.85	0.05	.505
1.50	4.32	19.38	3.48	2.79	0.05	.500
1.55	5.25	19.46	3.56	2.73	0.05	.496
1.60	6.28	19.69	3.67	2.68	0.05	.494
1.65	6.92	20.55	3.78	2.72	0.04	.500
1.70	6.99	21.39	3.84	2.79	0.04	.507
1.75	6.64	21.99	3.85	2.86	0.04	.514
1.80	6.09	22.22	3.82	2.91	0.04	.518
1.85	5.46	22.15	3.76	2.95	0.04	.520
1.90	5.05	21.71	3.70	2.94	0.04	.518
1.95	4.77	21.33	3.65	2.92	0.04	.516
2.00	4.61	20.86	3.60	2.89	0.05	.512
2.05	4.55	20.45	3.57	2.86	0.05	.509
2.10	4.49	20.09	3.54	2.84	0.05	.506
2.15	4.43	19.70	3.51	2.81	0.05	.502
2.20	4.60	19.24	3.49	2.76	0.05	.497
2.25	4.78	19.08	3.50	2.73	0.05	.494
2.30	4.80	19.04	3.49	2.72	0.05	.494
2.35	4.70	18.94	3.48	2.72	0.05	.493
2.40	4.52	18.80	3.45	2.72	0.05	.493
2.45	4.30	18.54	3.41	2.71	0.05	.491
2.50	4.20	18.11	3.38	2.68	0.05	.487
2.55	4.26	17.73	3.35	2.64	0.05	.483
2.60	4.30	17.48	3.34	2.62	0.05	.480
2.65	4.34	17.19	3.32	2.59	0.05	.476
2.70	4.46	16.91	3.31	2.55	0.06	.472
2.75	4.54	16.74	3.31	2.53	0.06	.470
2.80	4.70	16.48	3.31	2.49	0.06	.466
2.85	4.85	16.38	3.31	2.47	0.06	.464
2.90	5.02	16.25	3.32	2.45	0.06	.461
2.95	5.21	16.20	3.33	2.43	0.06	.460
3.00	5.37	16.22	3.35	2.42	0.06	.459
3.05	5.51	16.27	3.37	2.42	0.06	.459
3.10	5.66	16.37	3.39	2.41	0.05	.460
3.15	5.74	16.60	3.41	2.43	0.05	.462
3.20	5.78	16.82	3.43	2.45	0.05	.465
3.25	5.73	17.19	3.45	2.49	0.05	.469
3.30	5.41	17.64	3.45	2.55	0.05	.476
3.35	4.97	17.85	3.43	2.60	0.05	.480
3.40	4.38	18.02	3.39	2.66	0.05	.485
3.45	3.70	17.92	3.32	2.70	0.05	.488
3.50	3.19	17.52	3.24	2.70	0.06	.488
3.55	2.90	17.11	3.18	2.69	0.06	.485
3.60	2.69	16.75	3.13	2.67	0.06	.482
3.65	2.50	16.40	3.09	2.65	0.06	.480
3.70	2.42	16.00	3.05	2.62	0.06	.476
3.75	2.36	15.67	3.02	2.60	0.06	.472
3.80	2.41	15.30	2.99	2.56	0.06	.468

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\tilde{\epsilon})$	$R(\phi=0)$
3.85	2.46	15.06	2.98	2.53	0.06	.464
3.90	2.52	14.79	2.96	2.50	0.07	.460
3.95	2.66	14.51	2.95	2.46	0.07	.455
4.00	2.83	14.33	2.95	2.43	0.07	.451
4.10	3.23	14.07	2.97	2.37	0.07	.444
4.20	3.68	14.02	3.02	2.33	0.07	.440
4.30	4.06	14.21	3.07	2.31	0.07	.440
4.40	4.38	14.52	3.13	2.32	0.06	.442
4.50	4.62	14.99	3.19	2.35	0.06	.447
4.60	4.69	15.63	3.24	2.41	0.06	.455
4.70	4.67	16.30	3.29	2.48	0.06	.464
4.80	4.50	17.14	3.33	2.57	0.05	.475
4.90	4.19	18.10	3.37	2.68	0.05	.487
5.00	3.44	19.37	3.40	2.85	0.05	.505
5.10	2.10	20.58	3.38	3.05	0.05	.525
5.20	0.00	21.40	3.27	3.27	0.05	.548
5.30	-2.05	21.34	3.11	3.43	0.05	.566
5.40	-4.31	20.90	2.92	3.58	0.05	.586
5.50	-6.35	19.68	2.68	3.68	0.05	.604
5.60	-7.78	17.98	2.43	3.70	0.05	.618
5.70	-8.66	16.15	2.20	3.67	0.05	.629
5.80	-9.00	14.41	2.00	3.61	0.05	.637
5.90	-9.01	12.90	1.83	3.52	0.05	.641
6.00	-8.85	11.63	1.70	3.42	0.05	.643
6.10	-8.62	10.54	1.58	3.33	0.06	.644
6.20	-8.35	9.53	1.47	3.24	0.06	.646
6.30	-7.93	8.68	1.38	3.14	0.06	.643
6.40	-7.51	7.99	1.32	3.04	0.07	.640
6.50	-7.10	7.43	1.26	2.95	0.07	.635
6.60	-6.76	6.92	1.21	2.87	0.07	.631
6.70	-6.41	6.46	1.16	2.78	0.08	.626
6.80	-6.04	6.08	1.12	2.70	0.08	.619
6.90	-5.72	5.73	1.09	2.63	0.09	.613
7.00	-5.41	5.42	1.06	2.56	0.09	.607
7.10	-5.10	5.18	1.04	2.49	0.10	.598
7.20	-4.86	4.91	1.01	2.43	0.10	.593
7.30	-4.57	4.68	0.99	2.36	0.11	.583
7.40	-4.31	4.49	0.98	2.30	0.12	.573
7.50	-4.08	4.31	0.96	2.24	0.12	.565
7.60	-3.85	4.14	0.95	2.18	0.13	.556
7.70	-3.62	3.97	0.94	2.12	0.14	.546
7.80	-3.38	3.83	0.93	2.06	0.15	.533
7.90	-3.14	3.73	0.93	2.00	0.16	.518
8.00	-2.93	3.66	0.94	1.95	0.17	.505
8.10	-2.77	3.57	0.94	1.91	0.17	.494
8.20	-2.58	3.48	0.94	1.86	0.19	.481
8.30	-2.38	3.41	0.94	1.81	0.20	.465
8.40	-2.20	3.37	0.96	1.76	0.21	.449
8.50	-2.04	3.36	0.97	1.73	0.22	.434
8.60	-1.91	3.35	0.99	1.70	0.23	.422
8.70	-1.79	3.33	1.00	1.67	0.23	.411
8.80	-1.69	3.32	1.01	1.65	0.24	.401
8.90	-1.61	3.30	1.02	1.63	0.24	.394
9.00	-1.54	3.26	1.01	1.60	0.25	.388
9.10	-1.44	3.21	1.02	1.57	0.26	.378
9.20	-1.35	3.17	1.02	1.55	0.27	.369
9.30	-1.26	3.14	1.03	1.52	0.27	.360

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\bar{\epsilon})$	$R(\phi=0)$
9.40	-1.17	3.09	1.03	1.50	0.28	.352
9.50	-1.06	3.05	1.04	1.47	0.29	.340
9.60	-0.96	3.03	1.05	1.44	0.30	.329
9.70	-0.85	3.02	1.07	1.41	0.31	.318
9.80	-0.73	3.01	1.09	1.38	0.31	.307
9.90	-0.63	3.02	1.11	1.36	0.32	.297
10.00	-0.52	3.05	1.13	1.34	0.32	.287
10.10	-0.41	3.10	1.16	1.33	0.32	.278
10.20	-0.34	3.16	1.19	1.33	0.31	.274
10.30	-0.27	3.23	1.22	1.33	0.31	.271
10.40	-0.24	3.32	1.24	1.34	0.30	.270
10.50	-0.22	3.39	1.26	1.35	0.29	.271
10.60	-0.22	3.47	1.27	1.36	0.29	.274
10.70	-0.24	3.53	1.28	1.36	0.28	.278
10.80	-0.28	3.59	1.29	1.39	0.28	.282
10.90	-0.32	3.62	1.29	1.41	0.27	.286
11.00	-0.37	3.64	1.28	1.42	0.27	.290
11.10	-0.41	3.65	1.28	1.43	0.27	.293
11.20	-0.46	3.66	1.27	1.44	0.27	.297
11.30	-0.51	3.66	1.26	1.45	0.27	.301
11.40	-0.56	3.66	1.25	1.46	0.27	.305
11.50	-0.62	3.64	1.24	1.47	0.27	.309
11.60	-0.68	3.61	1.22	1.48	0.27	.313
11.70	-0.72	3.57	1.21	1.48	0.27	.315
11.80	-0.76	3.54	1.20	1.48	0.27	.318
11.90	-0.81	3.49	1.18	1.48	0.27	.321
12.00	-0.84	3.44	1.16	1.48	0.27	.323
12.20	-0.90	3.34	1.13	1.48	0.28	.327
12.40	-0.94	3.23	1.10	1.47	0.29	.329
12.60	-0.97	3.12	1.07	1.46	0.29	.332
12.80	-0.99	2.99	1.04	1.44	0.30	.333
13.00	-1.00	2.87	1.01	1.42	0.31	.333
13.20	-0.99	2.75	0.98	1.40	0.32	.332
13.40	-0.96	2.64	0.96	1.37	0.33	.329
13.60	-0.93	2.53	0.94	1.35	0.35	.325
13.80	-0.88	2.43	0.92	1.32	0.36	.320
14.00	-0.81	2.34	0.91	1.28	0.38	.312
14.20	-0.75	2.27	0.91	1.25	0.40	.304
14.40	-0.69	2.21	0.90	1.23	0.41	.296
14.60	-0.62	2.16	0.90	1.20	0.43	.286
14.80	-0.55	2.12	0.90	1.17	0.44	.276
15.00	-0.47	2.10	0.92	1.14	0.45	.264
15.20	-0.40	2.11	0.93	1.13	0.46	.255
15.40	-0.35	2.13	0.95	1.12	0.46	.249
15.60	-0.33	2.17	0.97	1.12	0.45	.246
15.80	-0.32	2.20	0.98	1.13	0.44	.246
16.00	-0.34	2.24	0.98	1.14	0.44	.249
16.20	-0.37	2.26	0.98	1.15	0.43	.253
16.40	-0.42	2.27	0.97	1.17	0.43	.260
16.60	-0.47	2.27	0.96	1.18	0.42	.267
16.80	-0.53	2.25	0.94	1.19	0.42	.273
17.00	-0.59	2.21	0.92	1.20	0.42	.282
17.20	-0.64	2.17	0.90	1.21	0.42	.289
17.40	-0.70	2.11	0.87	1.21	0.43	.297
17.60	-0.74	2.05	0.85	1.21	0.43	.304
17.80	-0.77	1.98	0.82	1.20	0.44	.310
18.00	-0.80	1.91	0.80	1.20	0.45	.317

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\bar{\epsilon})$	$R(\phi=0)$
18.20	-0.83	1.83	0.77	1.19	0.45	.325
18.40	-0.84	1.74	0.74	1.18	0.47	.330
18.60	-0.85	1.66	0.71	1.16	0.48	.335
18.80	-0.84	1.58	0.69	1.15	0.49	.340
19.00	-0.83	1.50	0.67	1.13	0.51	.343
19.20	-0.82	1.43	0.64	1.11	0.53	.347
19.40	-0.81	1.36	0.62	1.09	0.55	.350
19.60	-0.79	1.28	0.60	1.07	0.57	.353
19.80	-0.76	1.21	0.58	1.05	0.59	.354
20.00	-0.72	1.15	0.56	1.02	0.62	.354
20.20	-0.69	1.09	0.55	0.99	0.66	.352
20.40	-0.65	1.04	0.54	0.97	0.69	.350
20.60	-0.61	0.99	0.52	0.94	0.73	.347
20.80	-0.57	0.95	0.52	0.92	0.77	.342
21.00	-0.54	0.91	0.51	0.89	0.82	.338
21.20	-0.50	0.87	0.50	0.87	0.87	.331
21.40	-0.46	0.84	0.50	0.84	0.92	.325
21.60	-0.43	0.81	0.50	0.82	0.97	.318
21.80	-0.39	0.78	0.49	0.80	1.02	.312
22.00	-0.36	0.76	0.49	0.77	1.08	.303
22.20	-0.32	0.74	0.49	0.75	1.14	.295
22.40	-0.29	0.72	0.49	0.73	1.20	.287
22.60	-0.26	0.70	0.49	0.71	1.25	.279
22.80	-0.24	0.69	0.49	0.69	1.30	.272
23.00	-0.22	0.67	0.49	0.68	1.35	.267
23.20	-0.20	0.65	0.49	0.66	1.41	.263
23.40	-0.18	0.63	0.49	0.64	1.48	.259
23.60	-0.15	0.60	0.48	0.62	1.56	.252
23.80	-0.12	0.58	0.48	0.60	1.65	.244
24.00	-0.09	0.56	0.49	0.57	1.74	.234
24.20	-0.07	0.54	0.49	0.55	1.81	.224
24.40	-0.04	0.53	0.50	0.53	1.88	.213
24.60	-0.01	0.52	0.50	0.51	1.94	.203
24.80	0.02	0.50	0.51	0.49	1.98	.191
25.00	0.04	0.50	0.52	0.48	2.00	.180
25.20	0.07	0.49	0.53	0.46	2.02	.171
25.40	0.09	0.48	0.54	0.44	2.02	.161
25.60	0.12	0.47	0.55	0.43	2.00	.150
25.80	0.14	0.47	0.56	0.41	1.97	.140
26.00	0.16	0.46	0.57	0.40	1.92	.132
26.20	0.18	0.46	0.58	0.39	1.89	.125
26.40	0.20	0.45	0.59	0.38	1.84	.117
26.60	0.22	0.45	0.60	0.38	1.79	.111
26.80	0.24	0.45	0.61	0.37	1.74	.105
27.00	0.25	0.44	0.62	0.36	1.70	.099
27.25	0.28	0.44	0.63	0.35	1.63	.092
27.50	0.30	0.43	0.64	0.34	1.56	.085
27.75	0.32	0.43	0.66	0.33	1.49	.079
28.00	0.35	0.43	0.67	0.32	1.41	.073
28.25	0.36	0.43	0.68	0.32	1.37	.070
28.50	0.38	0.43	0.69	0.31	1.31	.065
28.75	0.40	0.43	0.70	0.31	1.26	.061
29.00	0.42	0.43	0.71	0.30	1.20	.057
29.25	0.44	0.43	0.72	0.30	1.15	.054
29.50	0.45	0.44	0.73	0.30	1.11	.052
29.75	0.46	0.44	0.74	0.30	1.08	.049
30.00	0.47	0.44	0.75	0.29	1.05	.047

Energy (eV)	$\epsilon_1$	$\epsilon_2$	n	k	$\text{Im}(-1/\epsilon)$	$R(\phi=0)$
30.50	0.50	0.45	0.76	0.29	1.00	.044
31.00	0.52	0.46	0.78	0.29	0.96	.042
31.50	0.53	0.46	0.79	0.29	0.93	.040
32.00	0.54	0.47	0.79	0.29	0.92	.040
32.50	0.55	0.46	0.80	0.29	0.89	.037
33.00	0.59	0.45	0.82	0.28	0.82	.033
33.50	0.61	0.47	0.83	0.28	0.80	.032
34.00	0.62	0.49	0.84	0.29	0.79	.032
34.50	0.62	0.50	0.85	0.30	0.78	.032
35.00	0.63	0.52	0.85	0.31	0.79	.033
36.00	0.61	0.54	0.85	0.32	0.81	.036
37.00	0.59	0.55	0.84	0.33	0.84	.039
38.00	0.57	0.54	0.83	0.33	0.87	.040
39.00	0.55	0.54	0.81	0.33	0.90	.042
40.00	0.53	0.52	0.80	0.33	0.95	.045