thors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks Ru
				Film	X-tal	Bulk	Prep		
KrL70	0.5-12	Refl		x			In	R	uhv evaporation in situ
CH R74	6.2-41.3	m-θ		x			Ex	R,n,k,ε_1,ε_2	included substrate temperature variation
CM76	1.97-2.84	Ellips			x		Heat	R,n,k	also LEED, AES; heat 1800°C uhv
KN N78	0.08-4.66	Ellips			x		EP	N,K,ε_1,ε_2,σ	table λ,n,k
WaL Unpl	0.1-60	Refl	4.2 for hν < 4.4 eV RT for hν > 4.4 eV		x		EP	R; KK: n,k,ε_1,ε_2	absorptivity measured by calorimetry hν < 4.4 eV, reflectivity measured hν > 4.4 eV, E⊥c, E∥c

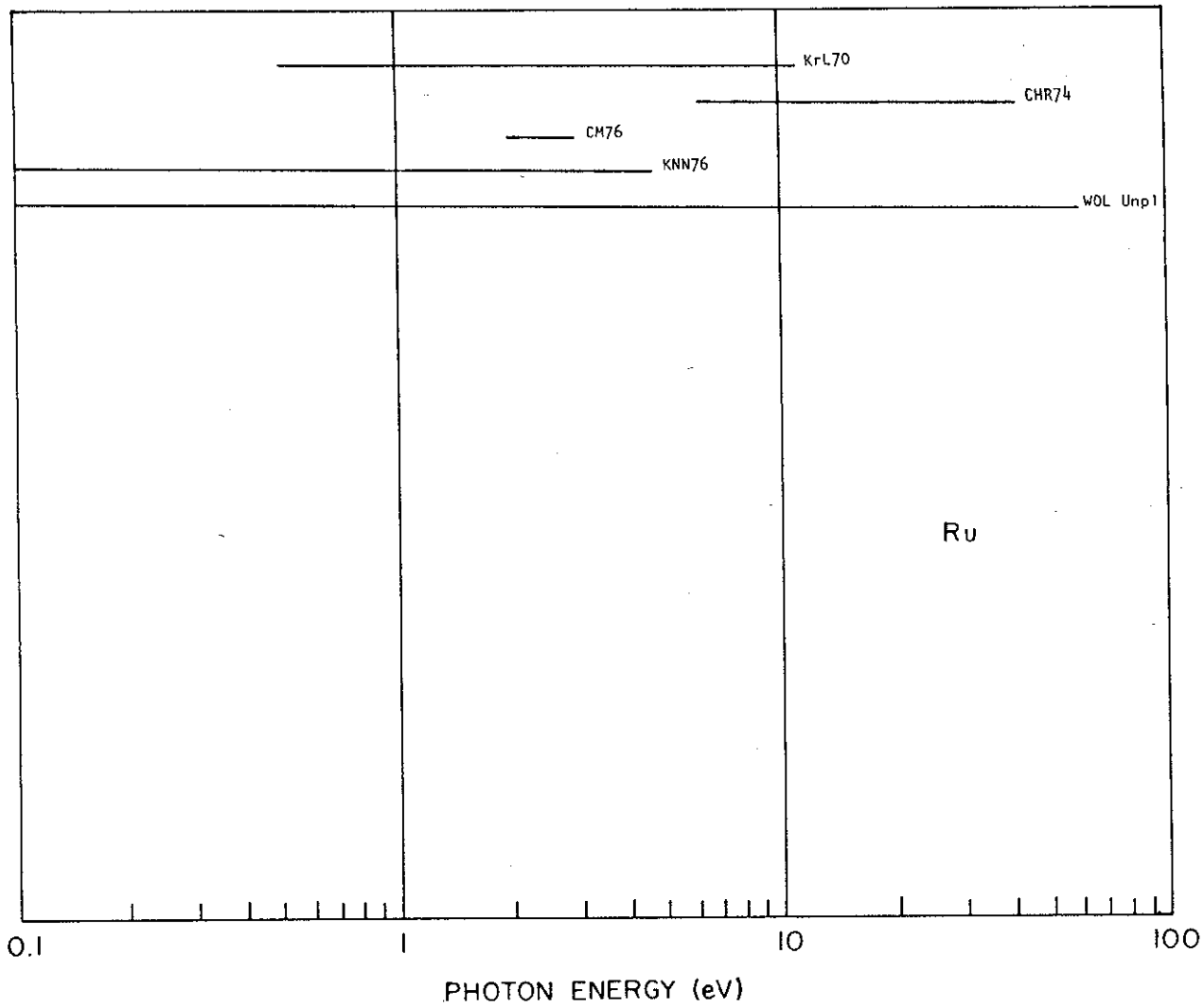

Fig. 53 Survey of available data for Ru

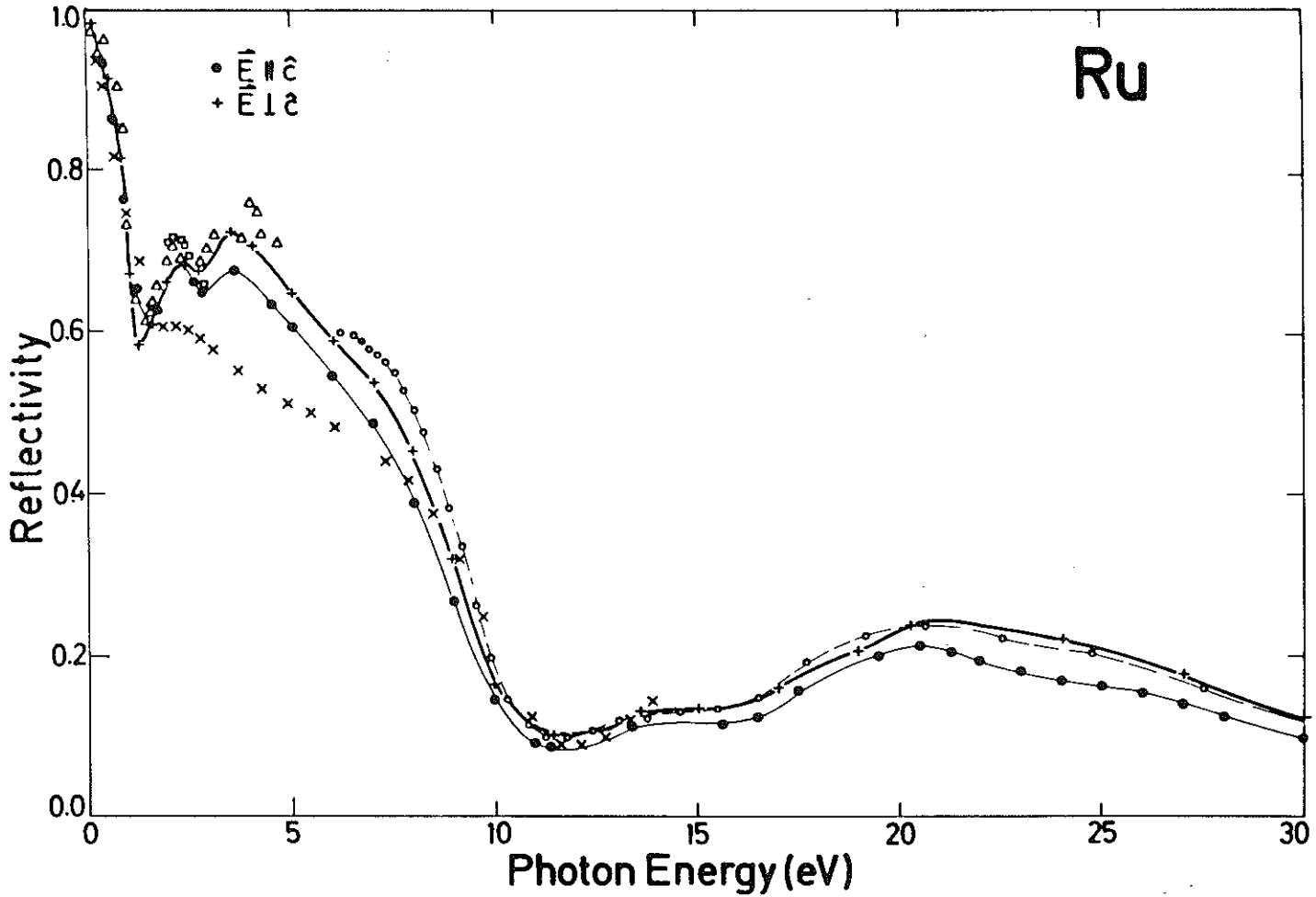

Fig. 54 Reflectivity of Ru. LOW (unpub) report results for single crystals with $\vec{E} \parallel \hat{c}$ (●●●) and $\vec{E} \perp \hat{c}$ (+++). Polycrystalline results as follows: ooo CHR74; xxx KL70; ΔΔΔ KNN78; □□□CM76.

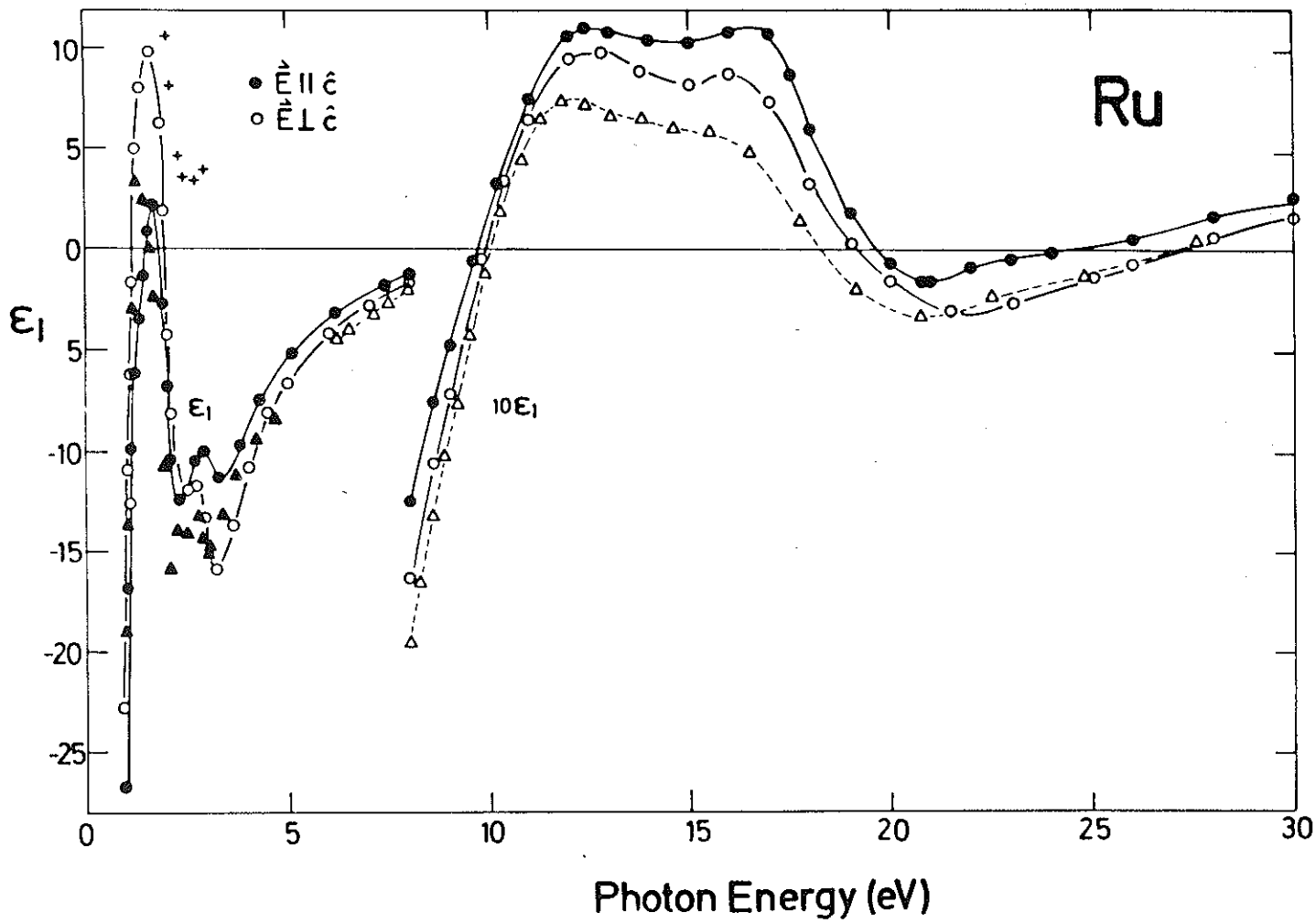

Fig. 55 ε_1 for Ru. LOW (unpub) report results for single crystals with $\vec{E} \parallel \hat{c}$ (●●●) and $\vec{E} \perp \hat{c}$ (ooo). Polycrystalline results as follows: ▲▲▲ KNN78; +++ CM76; ΔΔΔ CHR74.

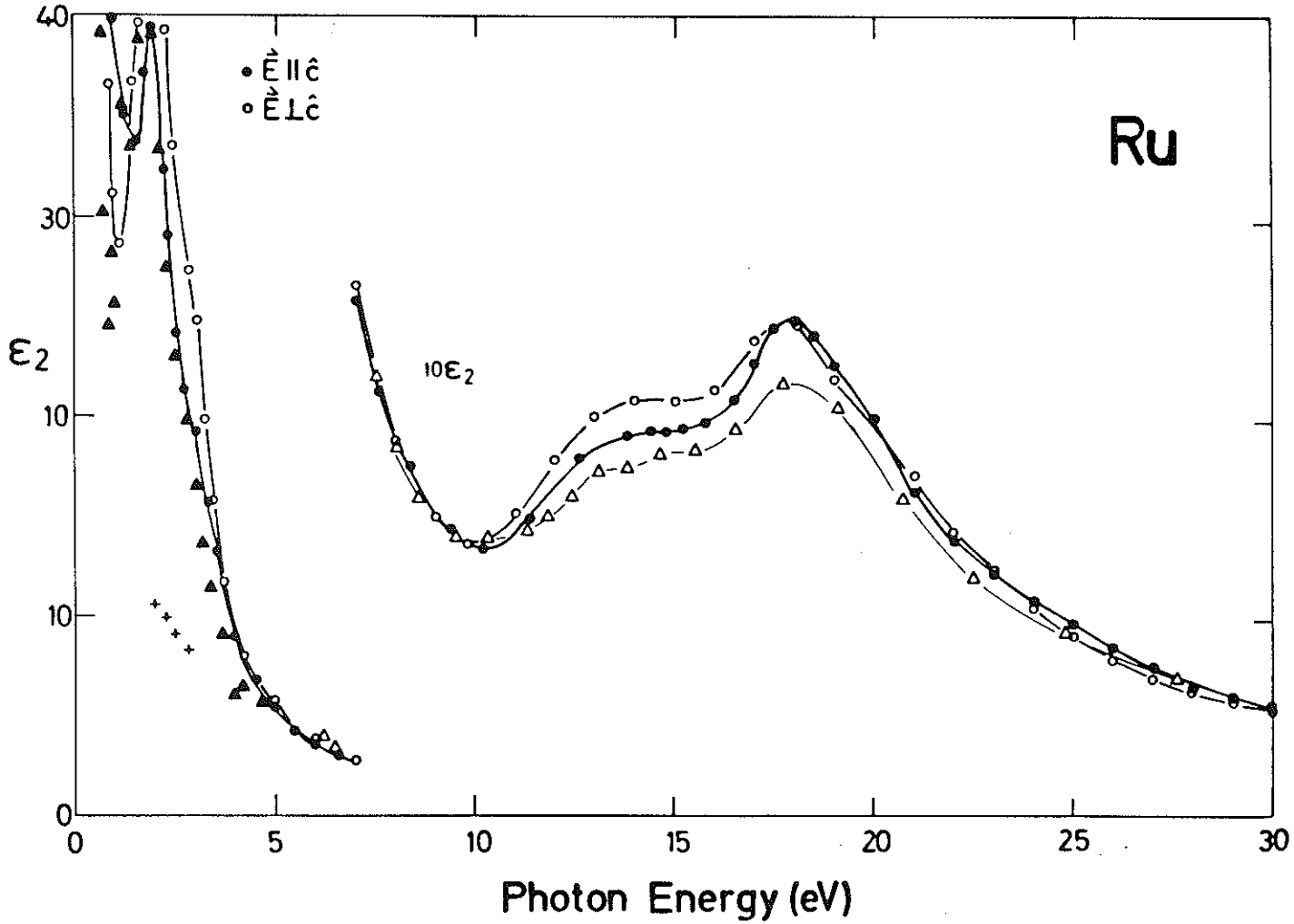

Fig. 56 ε_2 for Ru. LOW (unpub) report results for single crystals with $\vec{E} \parallel \hat{c}$ (●●●) and $\vec{E} \perp \hat{c}$ (ooo). Polycrystalline results as follows: ▲▲▲ KNN78; +++ CM76; ΔΔΔ CHR74.

Ruthenium single crystal with $\vec{E} \parallel \hat{c}$

D.W. Lynch, C.G. Olson, and J.H. Weaver (unpub)

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
0.10	-2508.09	1181.78	11.50	51.38	0.00	.984
0.15	-1197.06	537.39	7.59	35.42	0.00	.977
0.20	-701.41	322.17	5.93	27.14	0.00	.970
0.25	-461.75	215.31	4.89	22.04	0.00	.962
0.30	-323.68	160.20	4.33	18.50	0.00	.953
0.35	-239.55	124.09	3.89	15.96	0.00	.944
0.40	-182.29	100.48	3.60	13.97	0.00	.933
0.45	-142.11	83.55	3.37	12.39	0.00	.922
0.50	-111.82	70.34	3.18	11.04	0.00	.909
0.55	-87.11	62.38	3.16	9.85	0.01	.889
0.60	-68.18	58.31	3.28	8.89	0.01	.865
0.65	-54.35	57.19	3.50	8.16	0.01	.839
0.70	-46.67	55.93	3.62	7.73	0.01	.822
0.75	-42.20	52.61	3.55	7.40	0.01	.812
0.80	-37.58	47.94	3.42	7.02	0.01	.801
0.85	-32.34	43.46	3.30	6.58	0.01	.786
0.90	-26.90	39.81	3.25	6.12	0.02	.766
0.95	-21.30	37.51	3.30	5.68	0.02	.740
1.00	-16.86	36.13	3.39	5.33	0.02	.715
1.05	-12.72	35.44	3.53	5.02	0.02	.691
1.10	-9.93	35.33	3.66	4.83	0.03	.675
1.15	-7.63	35.22	3.77	4.67	0.03	.662
1.20	-6.18	35.15	3.84	4.57	0.03	.654
1.25	-4.78	34.77	3.89	4.47	0.03	.645
1.30	-3.62	34.47	3.94	4.38	0.03	.638
1.35	-2.61	34.09	3.97	4.29	0.03	.632
1.40	-1.39	33.71	4.02	4.19	0.03	.624
1.45	-0.26	33.67	4.09	4.12	0.03	.618
1.50	0.80	33.85	4.16	4.07	0.03	.614
1.55	1.73	34.39	4.25	4.04	0.03	.613
1.60	2.12	35.31	4.33	4.08	0.03	.615
1.65	2.19	36.19	4.39	4.13	0.03	.619
1.70	1.80	37.17	4.42	4.21	0.03	.624
1.80	0.18	38.59	4.40	4.38	0.03	.636
1.90	-2.81	39.51	4.29	4.61	0.03	.651
2.00	-6.77	38.86	4.04	4.81	0.02	.667
2.10	-10.45	36.15	3.69	4.90	0.03	.679
2.15	-11.43	34.16	3.51	4.87	0.03	.682
2.20	-12.06	32.32	3.35	4.82	0.03	.683
2.25	-12.33	30.61	3.21	4.76	0.03	.682
2.30	-12.52	29.05	3.09	4.70	0.03	.681
2.35	-12.46	27.58	2.98	4.62	0.03	.679
2.40	-12.29	26.29	2.89	4.55	0.03	.677
2.50	-11.80	24.13	2.74	4.40	0.03	.671
2.60	-11.09	22.49	2.64	4.25	0.04	.663
2.70	-10.50	21.32	2.58	4.14	0.04	.656
2.80	-10.02	20.57	2.54	4.05	0.04	.650
2.90	-10.09	20.03	2.48	4.03	0.04	.650
3.00	-10.56	19.22	2.38	4.03	0.04	.656

Ru $\vec{E} \parallel \hat{c}$

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
3.10	-10.91	18.13	2.26	4.00	0.04	.661
3.20	-11.16	16.93	2.13	3.96	0.04	.666
3.30	-11.29	15.61	2.00	3.91	0.04	.671
3.40	-11.13	14.33	1.87	3.83	0.04	.673
3.50	-10.87	13.18	1.76	3.74	0.05	.674
3.60	-10.57	12.09	1.66	3.65	0.05	.675
3.70	-10.12	11.14	1.57	3.55	0.05	.673
3.80	-9.72	10.26	1.49	3.45	0.05	.672
3.90	-9.20	9.48	1.42	3.35	0.05	.668
4.00	-8.65	8.89	1.37	3.24	0.06	.661
4.10	-8.20	8.40	1.33	3.16	0.06	.655
4.20	-7.81	7.94	1.29	3.08	0.06	.649
4.30	-7.42	7.54	1.26	3.00	0.07	.643
4.40	-7.11	7.14	1.22	2.93	0.07	.639
4.50	-6.76	6.80	1.19	2.86	0.07	.633
4.60	-6.46	6.47	1.16	2.79	0.08	.628
4.70	-6.16	6.19	1.13	2.73	0.08	.622
4.80	-5.90	5.92	1.11	2.67	0.08	.617
4.90	-5.66	5.67	1.08	2.61	0.09	.612
5.00	-5.43	5.44	1.06	2.56	0.09	.607
5.10	-5.24	5.20	1.03	2.51	0.10	.604
5.20	-5.03	4.97	1.01	2.46	0.10	.600
5.30	-4.84	4.73	0.98	2.41	0.10	.597
5.40	-4.63	4.48	0.95	2.35	0.11	.593
5.50	-4.39	4.27	0.93	2.29	0.11	.586
5.60	-4.15	4.11	0.92	2.23	0.12	.576
5.70	-3.94	3.98	0.91	2.18	0.13	.567
5.80	-3.76	3.86	0.90	2.14	0.13	.559
5.90	-3.59	3.74	0.89	2.10	0.14	.552
6.00	-3.44	3.62	0.88	2.05	0.15	.545
6.20	-3.15	3.42	0.87	1.98	0.16	.531
6.40	-2.93	3.21	0.84	1.91	0.17	.521
6.60	-2.70	3.00	0.82	1.84	0.18	.510
6.80	-2.49	2.80	0.79	1.77	0.20	.500
7.00	-2.29	2.59	0.76	1.69	0.22	.489
7.20	-2.05	2.41	0.75	1.61	0.24	.472
7.40	-1.84	2.25	0.73	1.54	0.27	.455
7.60	-1.61	2.12	0.73	1.46	0.30	.433
7.80	-1.42	2.02	0.73	1.39	0.33	.411
8.00	-1.25	1.92	0.72	1.33	0.37	.391
8.20	-1.07	1.83	0.72	1.26	0.41	.366
8.40	-0.91	1.75	0.73	1.20	0.45	.342
8.60	-0.76	1.68	0.74	1.14	0.49	.318
8.80	-0.63	1.60	0.74	1.08	0.54	.295
9.00	-0.47	1.54	0.75	1.02	0.59	.267
9.20	-0.34	1.49	0.77	0.97	0.64	.243
9.40	-0.21	1.44	0.79	0.91	0.68	.217
9.60	-0.07	1.40	0.82	0.86	0.71	.190
9.80	0.06	1.36	0.85	0.81	0.73	.167
10.00	0.20	1.34	0.88	0.76	0.73	.144
10.20	0.33	1.33	0.92	0.72	0.71	.125
10.40	0.45	1.33	0.96	0.69	0.67	.110
10.60	0.57	1.35	1.01	0.67	0.63	.100
10.80	0.67	1.38	1.05	0.66	0.59	.094
11.00	0.76	1.42	1.09	0.65	0.55	.090
11.20	0.84	1.45	1.12	0.65	0.52	.088
11.40	0.91	1.49	1.15	0.65	0.49	.087

Ru $\vec{E} \parallel \hat{c}$

Energy (eV)	ε_1	ε_2	n	k	$Im(-1/\tilde{\varepsilon})$	$R(\phi=0)$
11.60	0.97	1.54	1.18	0.65	0.46	.088
11.80	1.03	1.59	1.21	0.66	0.44	.090
12.00	1.07	1.65	1.23	0.67	0.43	.092
12.20	1.09	1.70	1.25	0.68	0.42	.095
12.40	1.11	1.75	1.26	0.69	0.41	.098
12.60	1.11	1.80	1.27	0.71	0.40	.102
12.80	1.10	1.83	1.27	0.72	0.40	.104
13.00	1.10	1.86	1.28	0.73	0.40	.106
13.20	1.09	1.88	1.28	0.74	0.40	.108
13.40	1.08	1.90	1.28	0.75	0.40	.110
13.60	1.07	1.91	1.28	0.75	0.40	.111
13.80	1.07	1.91	1.28	0.75	0.40	.111
14.00	1.05	1.95	1.28	0.76	0.40	.114
14.20	1.04	1.94	1.27	0.76	0.40	.114
14.40	1.04	1.94	1.27	0.76	0.40	.114
14.60	1.04	1.94	1.27	0.76	0.40	.114
14.80	1.04	1.94	1.27	0.76	0.40	.114
15.00	1.04	1.94	1.27	0.76	0.40	.114
15.20	1.05	1.95	1.28	0.76	0.40	.114
15.40	1.05	1.96	1.28	0.77	0.40	.115
15.60	1.06	1.97	1.28	0.77	0.39	.115
15.80	1.09	1.98	1.29	0.76	0.39	.115
16.00	1.09	2.03	1.30	0.78	0.38	.118
16.25	1.10	2.06	1.31	0.79	0.38	.120
16.50	1.11	2.11	1.32	0.80	0.37	.123
16.75	1.11	2.18	1.33	0.82	0.36	.128
17.00	1.08	2.29	1.34	0.85	0.36	.136
17.25	1.00	2.39	1.34	0.89	0.36	.145
17.50	0.88	2.46	1.32	0.93	0.36	.155
17.75	0.75	2.50	1.30	0.96	0.37	.164
18.00	0.61	2.51	1.26	0.99	0.38	.173
18.25	0.47	2.48	1.22	1.01	0.39	.181
18.50	0.36	2.42	1.18	1.02	0.40	.185
18.75	0.25	2.35	1.14	1.03	0.42	.190
19.00	0.19	2.27	1.11	1.02	0.44	.192
19.25	0.13	2.21	1.08	1.02	0.45	.195
19.50	0.06	2.15	1.05	1.02	0.46	.199
19.75	0.00	2.08	1.02	1.02	0.48	.203
20.00	-0.06	2.01	0.99	1.02	0.50	.208
20.25	-0.11	1.91	0.95	1.01	0.52	.211
20.50	-0.14	1.82	0.92	0.99	0.55	.212
20.75	-0.15	1.72	0.89	0.97	0.58	.211
21.00	-0.15	1.63	0.86	0.94	0.61	.209
21.25	-0.13	1.56	0.85	0.92	0.64	.205
21.50	-0.13	1.49	0.83	0.90	0.67	.203
21.75	-0.11	1.43	0.81	0.88	0.70	.198
22.00	-0.08	1.38	0.81	0.86	0.72	.193
22.50	-0.06	1.30	0.79	0.82	0.77	.187
23.00	-0.04	1.22	0.77	0.79	0.82	.182
23.50	-0.01	1.15	0.75	0.76	0.87	.175
24.00	0.00	1.09	0.74	0.74	0.92	.171
24.50	0.03	1.03	0.73	0.71	0.97	.166
25.00	0.04	0.98	0.71	0.69	1.02	.163
25.50	0.04	0.92	0.69	0.66	1.08	.161
26.00	0.07	0.86	0.68	0.63	1.15	.154
26.50	0.09	0.81	0.67	0.60	1.23	.148
27.00	0.12	0.76	0.67	0.57	1.29	.140

Ru $\vec{E} \parallel \hat{c}$

Energy (eV)	ε_1	ε_2	n	k	$Im(-1/\tilde{\varepsilon})$	$R(\phi=0)$
27.50	0.15	0.71	0.66	0.54	1.34	.132
28.00	0.18	0.67	0.66	0.51	1.39	.124
28.50	0.21	0.64	0.67	0.48	1.41	.115
29.00	0.24	0.62	0.67	0.46	1.42	.107
29.50	0.26	0.59	0.67	0.44	1.41	.101
30.00	0.27	0.57	0.67	0.43	1.43	.097
30.50	0.28	0.54	0.67	0.40	1.46	.093
31.00	0.31	0.50	0.67	0.37	1.43	.084
31.50	0.34	0.48	0.68	0.35	1.39	.077
32.00	0.37	0.46	0.69	0.33	1.34	.070
32.50	0.39	0.44	0.70	0.31	1.28	.064
33.00	0.41	0.43	0.71	0.30	1.21	.058
33.50	0.44	0.41	0.72	0.29	1.15	.053
34.00	0.46	0.40	0.73	0.27	1.08	.048
34.50	0.47	0.39	0.74	0.26	1.03	.045
35.00	0.51	0.38	0.75	0.25	0.94	.039
36.00	0.54	0.37	0.77	0.24	0.88	.035
37.00	0.57	0.36	0.79	0.23	0.80	.030
38.00	0.59	0.36	0.80	0.22	0.75	.027
39.00	0.62	0.35	0.82	0.22	0.70	.024
40.00	0.64	0.36	0.83	0.22	0.66	.022

Ruthenium single crystal with $\vec{E} \perp \hat{c}$

D.W. Lynch, C.G. Olson, and J.H. Weaver (unpub)

Energy (eV)	ε_1	ε_2	n	k	$Im(-1/\tilde{\varepsilon})$	$R(\phi=0)$
0.10	-2440.73	1204.06	11.85	50.81	0.00	.983
0.15	-1163.96	589.65	8.39	35.13	0.00	.975
0.20	-694.01	363.06	6.68	27.18	0.00	.966
0.25	-464.30	249.97	5.61	22.27	0.00	.958
0.30	-333.67	186.97	4.94	18.92	0.00	.950
0.35	-253.16	141.56	4.30	16.48	0.00	.943
0.40	-195.40	113.11	3.90	14.51	0.00	.933
0.45	-155.44	91.74	3.54	12.96	0.00	.925
0.50	-124.65	76.13	3.27	11.63	0.00	.915
0.55	-100.73	64.94	3.09	10.50	0.00	.903
0.60	-82.08	56.78	2.98	9.54	0.01	.888
0.65	-67.50	50.47	2.90	8.71	0.01	.873
0.70	-55.87	45.10	2.82	7.99	0.01	.856
0.75	-46.03	40.59	2.77	7.33	0.01	.837
0.80	-37.59	36.73	2.73	6.71	0.01	.815
0.85	-30.00	33.44	2.73	6.12	0.02	.787
0.90	-22.76	31.25	2.82	5.54	0.02	.751
0.95	-16.55	29.89	2.97	5.03	0.03	.711
1.00	-11.02	29.09	3.17	4.59	0.03	.670
1.05	-6.20	28.75	3.41	4.22	0.03	.634
1.10	-1.66	28.88	3.69	3.91	0.03	.604
1.15	2.07	29.85	4.00	3.73	0.03	.589
1.20	4.94	31.37	4.28	3.66	0.03	.585
1.25	6.80	33.15	4.51	3.68	0.03	.589
1.30	7.90	34.63	4.66	3.72	0.03	.593
1.35	8.71	35.75	4.77	3.75	0.03	.597
1.40	9.23	36.85	4.86	3.79	0.03	.601
1.45	9.62	37.79	4.93	3.83	0.02	.604
1.50	9.72	38.86	4.99	3.89	0.02	.609
1.55	9.81	39.73	5.04	3.94	0.02	.613
1.60	9.59	40.95	5.08	4.03	0.02	.618
1.65	9.16	41.99	5.11	4.11	0.02	.623
1.70	8.48	43.19	5.12	4.22	0.02	.629
1.80	6.21	45.42	5.10	4.45	0.02	.642
1.90	1.81	47.42	4.96	4.78	0.02	.660
2.00	-4.26	46.66	4.61	5.06	0.02	.677
2.10	-8.12	42.83	4.21	5.09	0.02	.682
2.15	-8.89	40.82	4.05	5.03	0.02	.681
2.20	-9.53	39.40	3.94	5.00	0.02	.681
2.25	-10.35	38.13	3.82	4.99	0.02	.683
2.30	-11.15	36.70	3.69	4.97	0.02	.684
2.35	-11.72	35.14	3.56	4.94	0.03	.685
2.40	-11.96	33.63	3.44	4.88	0.03	.684
2.50	-12.06	31.17	3.27	4.77	0.03	.681
2.60	-11.86	29.30	3.14	4.66	0.03	.677
2.70	-11.67	28.11	3.06	4.59	0.03	.674
2.80	-12.10	27.40	2.99	4.59	0.03	.676
2.90	-13.29	26.56	2.87	4.64	0.03	.686
3.00	-15.05	24.77	2.64	4.69	0.03	.701

Ru $\vec{E} \perp \hat{c}$

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
3.10	-15.76	22.29	2.40	4.64	0.03	.710
3.20	-15.95	19.89	2.18	4.55	0.03	.717
3.30	-15.65	17.70	2.00	4.43	0.03	.721
3.40	-15.11	15.81	1.84	4.30	0.03	.723
3.50	-14.42	14.22	1.71	4.16	0.03	.723
3.60	-13.70	12.88	1.60	4.03	0.04	.722
3.70	-13.00	11.69	1.50	3.90	0.04	.721
3.80	-12.24	10.66	1.41	3.77	0.04	.718
3.90	-11.47	9.81	1.35	3.64	0.04	.713
4.00	-10.75	9.13	1.29	3.53	0.05	.707
4.10	-10.11	8.54	1.25	3.42	0.05	.701
4.20	-9.50	8.03	1.21	3.31	0.05	.694
4.30	-8.93	7.61	1.18	3.21	0.06	.686
4.40	-8.44	7.23	1.16	3.13	0.06	.679
4.50	-7.95	6.94	1.14	3.04	0.06	.670
4.60	-7.56	6.70	1.13	2.97	0.07	.662
4.70	-7.24	6.47	1.11	2.91	0.07	.656
4.80	-6.98	6.22	1.09	2.86	0.07	.652
4.90	-6.74	5.96	1.06	2.81	0.07	.650
5.00	-6.52	5.68	1.03	2.75	0.08	.648
5.10	-6.28	5.39	1.00	2.70	0.08	.646
5.20	-6.03	5.11	0.97	2.64	0.08	.643
5.30	-5.78	4.84	0.94	2.58	0.09	.640
5.40	-5.51	4.59	0.91	2.52	0.09	.635
5.50	-5.22	4.41	0.90	2.45	0.09	.627
5.60	-4.99	4.21	0.88	2.40	0.10	.622
5.70	-4.73	4.06	0.87	2.34	0.10	.613
5.80	-4.51	3.93	0.86	2.29	0.11	.605
5.90	-4.31	3.80	0.85	2.24	0.12	.598
6.00	-4.12	3.68	0.84	2.20	0.12	.591
6.20	-3.77	3.48	0.82	2.11	0.13	.576
6.40	-3.49	3.29	0.81	2.04	0.14	.564
6.60	-3.26	3.07	0.78	1.97	0.15	.556
6.80	-3.01	2.88	0.76	1.89	0.17	.545
7.00	-2.79	2.66	0.73	1.82	0.18	.538
7.20	-2.56	2.46	0.70	1.75	0.20	.527
7.40	-2.32	2.28	0.68	1.67	0.22	.513
7.60	-2.08	2.13	0.67	1.59	0.24	.496
7.80	-1.85	2.00	0.66	1.51	0.27	.476
8.00	-1.63	1.88	0.66	1.44	0.30	.454
8.20	-1.43	1.78	0.65	1.36	0.34	.430
8.40	-1.23	1.71	0.66	1.29	0.39	.403
8.60	-1.06	1.62	0.66	1.22	0.43	.378
8.80	-0.87	1.56	0.68	1.15	0.49	.346
9.00	-0.71	1.50	0.69	1.09	0.54	.317
9.20	-0.55	1.44	0.70	1.02	0.61	.286
9.40	-0.37	1.40	0.73	0.95	0.67	.251
9.60	-0.20	1.37	0.77	0.89	0.71	.216
9.80	-0.04	1.37	0.82	0.84	0.73	.185
10.00	0.09	1.38	0.86	0.81	0.72	.163
10.20	0.22	1.38	0.90	0.77	0.71	.143
10.40	0.35	1.40	0.94	0.74	0.67	.127
10.60	0.47	1.42	0.99	0.72	0.63	.115
10.80	0.57	1.46	1.04	0.71	0.59	.108
11.00	0.66	1.51	1.08	0.70	0.55	.104
11.20	0.74	1.56	1.11	0.70	0.52	.102
11.40	0.81	1.61	1.14	0.70	0.50	.101

Ru $\vec{E} \perp \hat{c}$

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
11.60	0.87	1.66	1.17	0.71	0.47	.102
11.80	0.92	1.72	1.20	0.72	0.45	.104
12.00	0.96	1.79	1.22	0.73	0.43	.107
12.20	0.97	1.85	1.24	0.75	0.42	.111
12.40	0.98	1.90	1.25	0.76	0.42	.113
12.60	0.98	1.94	1.25	0.77	0.41	.116
12.80	0.99	1.97	1.26	0.78	0.41	.118
13.00	0.98	2.01	1.27	0.79	0.40	.121
13.20	0.97	2.05	1.27	0.81	0.40	.124
13.40	0.95	2.08	1.27	0.82	0.40	.127
13.60	0.93	2.09	1.27	0.83	0.40	.129
13.80	0.90	2.11	1.26	0.83	0.40	.131
14.00	0.88	2.11	1.26	0.84	0.40	.132
14.20	0.87	2.10	1.25	0.84	0.41	.132
14.40	0.87	2.10	1.25	0.84	0.41	.132
14.60	0.86	2.10	1.25	0.84	0.41	.133
14.80	0.85	2.10	1.25	0.84	0.41	.133
15.00	0.85	2.10	1.25	0.84	0.41	.133
15.20	0.85	2.10	1.25	0.84	0.41	.133
15.40	0.86	2.11	1.25	0.84	0.41	.133
15.60	0.86	2.12	1.25	0.85	0.41	.134
15.80	0.87	2.13	1.26	0.85	0.40	.134
16.00	0.89	2.14	1.27	0.85	0.40	.134
16.25	0.89	2.22	1.28	0.87	0.39	.139
16.50	0.86	2.29	1.28	0.89	0.38	.145
16.75	0.81	2.35	1.28	0.91	0.38	.151
17.00	0.75	2.40	1.28	0.94	0.38	.158
17.25	0.67	2.45	1.27	0.97	0.38	.165
17.50	0.56	2.48	1.25	1.00	0.38	.175
17.75	0.45	2.48	1.22	1.02	0.39	.182
18.00	0.33	2.47	1.19	1.04	0.40	.190
18.25	0.22	2.42	1.15	1.05	0.41	.196
18.50	0.15	2.35	1.12	1.05	0.42	.200
18.75	0.09	2.28	1.09	1.05	0.44	.202
19.00	0.04	2.23	1.07	1.05	0.45	.205
19.25	-0.01	2.18	1.04	1.05	0.46	.208
19.50	-0.06	2.12	1.02	1.04	0.47	.212
19.75	-0.10	2.07	0.99	1.04	0.48	.215
20.00	-0.15	2.01	0.97	1.04	0.49	.219
20.25	-0.20	1.95	0.94	1.04	0.51	.223
20.50	-0.24	1.88	0.91	1.03	0.52	.228
20.75	-0.27	1.80	0.88	1.02	0.54	.231
21.00	-0.29	1.72	0.85	1.01	0.57	.234
21.25	-0.30	1.64	0.82	0.99	0.59	.235
21.50	-0.30	1.56	0.80	0.97	0.62	.234
21.75	-0.30	1.50	0.79	0.95	0.64	.234
22.00	-0.29	1.44	0.77	0.94	0.67	.233
22.50	-0.27	1.33	0.74	0.90	0.72	.230
23.00	-0.25	1.23	0.71	0.87	0.78	.229
23.50	-0.22	1.13	0.68	0.83	0.85	.223
24.00	-0.19	1.05	0.67	0.79	0.92	.218
24.50	-0.15	0.98	0.65	0.76	0.99	.212
25.00	-0.12	0.92	0.64	0.73	1.07	.205
25.50	-0.09	0.86	0.62	0.69	1.14	.200
26.00	-0.06	0.81	0.61	0.66	1.23	.194
26.50	-0.03	0.76	0.60	0.63	1.32	.185
27.00	0.01	0.71	0.60	0.59	1.41	.177

Ru $\vec{E} \perp \hat{c}$

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
27.50	0.05	0.67	0.60	0.56	1.49	.165
28.00	0.08	0.63	0.60	0.53	1.55	.155
28.50	0.11	0.61	0.61	0.50	1.59	.144
29.00	0.15	0.58	0.61	0.48	1.61	.134
29.50	0.17	0.57	0.62	0.46	1.61	.126
30.00	0.18	0.55	0.62	0.45	1.64	.123
30.50	0.19	0.52	0.61	0.43	1.70	.120
31.00	0.21	0.48	0.61	0.40	1.74	.114
31.50	0.24	0.45	0.62	0.37	1.72	.104
32.00	0.28	0.43	0.63	0.34	1.65	.093
32.50	0.31	0.42	0.64	0.32	1.56	.083
33.00	0.33	0.41	0.65	0.31	1.49	.077
33.50	0.35	0.39	0.66	0.30	1.42	.071
34.00	0.37	0.38	0.67	0.28	1.34	.065
34.50	0.39	0.37	0.68	0.27	1.28	.060
35.00	0.42	0.36	0.70	0.26	1.18	.054
36.00	0.45	0.35	0.72	0.25	1.07	.047
37.00	0.48	0.34	0.73	0.23	0.97	.041
38.00	0.52	0.33	0.75	0.22	0.87	.035
39.00	0.55	0.34	0.77	0.22	0.81	.031
40.00	0.58	0.35	0.79	0.22	0.77	.028