Authors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks
				Film	X-tal	Bulk	Prep		Cu-1
Sa39	2.6-27.6	Refl		x			Ex	R	
JK54	~2.07-4.96	Ellips		x				$-\varepsilon_1,\mu$	
Sch54	1.31-2.76	Trans, Refl Ellips		x				k	
Sc54	0.41-1.24	Trans, Refl		x				$n/\lambda, k/\lambda$	
ST54	1.31-3.1	Refl		x				KK: n	R measured at 45° angle of incidence
Ho55	0.08-1.24	Ellips		x				σ	
Bio56	0.38-4.13	Refl	4.2			x	EP	A	absorptivity measured by calorimetry
Sch57	1.31-3.1	Trans		x				n,k	
Ott61	1.88-2.82	Ellips			x			$-\varepsilon_1,\varepsilon_2$	
DH64	0.06-5.64	Refl		x				R	
SG64	1.88-2.82	Ellips		x			In	ε_1	
Bea65	2.7-27	m-θ				x	EP	R, $\varepsilon_1,\varepsilon_2$, and KK: $\varepsilon_1,\varepsilon_2$	
DoM65	0.09-0.99	Ellips		x				n,k	
BG68	0.11-1.24	Refl	4.2			x	EP	A	absorptivity measured by calorimetry, see also Bio56

Authors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks Cu-2
				Film	X-tal	Bulk	Prep		
HKS68	35-250	Trans		x				μ	absorption measurements with synchrotron radiation
PS69	1.7-5.9	Refl	77-920			x	Heat	ε_2/λ	temperature dependent absorption measurements
SeS70	0.5-11.8	Refl				x	EP	R	
JC72	0.5-6.5	Trans, Refl		x			Ex	$n,k,\varepsilon_1,\varepsilon_2$	
SN72	0.41-1.24	Ellips				x	Heat	σ	
HGK74	13-150	Trans		x			Ex	KK: $\varepsilon_1,\varepsilon_2,n,k,\mu,R,$ $Im(\varepsilon^{-1})$	absorption measurements with synchrotron radiation
WeG74	20-120			x				μ	energy loss spectroscopy
HGK75	13-150	Trans		x			In	KK: μ	absorption measurements with synchrotron radiation
JC75	0.5-6.5	Trans, Refl	78, 300, 423	x				n,k,ε_2	same data as JC72
RT75	2-6	Trans, Refl		x			Ex	ε_2	thin films
HGK76	30-150	Trans		x				KK: μ	absorption measurements with synchrotron radiation
MR76	0.4-0.8	Refl	10-310	x		x	EP	A	absorptivity measurements by calorimetry

Authors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks
				Film	X-tal	Bulk	Prep		Cu-3
BT77	18-31	m-θ		x			In	log R	R measured at 30° angle of incidence with synchrotron radiation
FDS77	0.5-40	Trans		x				KK: $\varepsilon_1, \varepsilon_2$	energy loss spectroscopy
RYE77			150-1000					ε_H	emissivity
Sm77	1.96, 2.27	Ellips				x	Sput	n,k	extensive surface studies, MP, anneal, sputtered, AES
BCT79	18-35	m-θ		x			In	$\varepsilon_1, \varepsilon_2, \mu$	
Ben Unpl	0.16-4.3		4.2			x	CP	A	absorptivity measured by calorimetry
We Unpl	0.2-1.8		4.2			x	CP	A	absorptivity measured by calorimetry

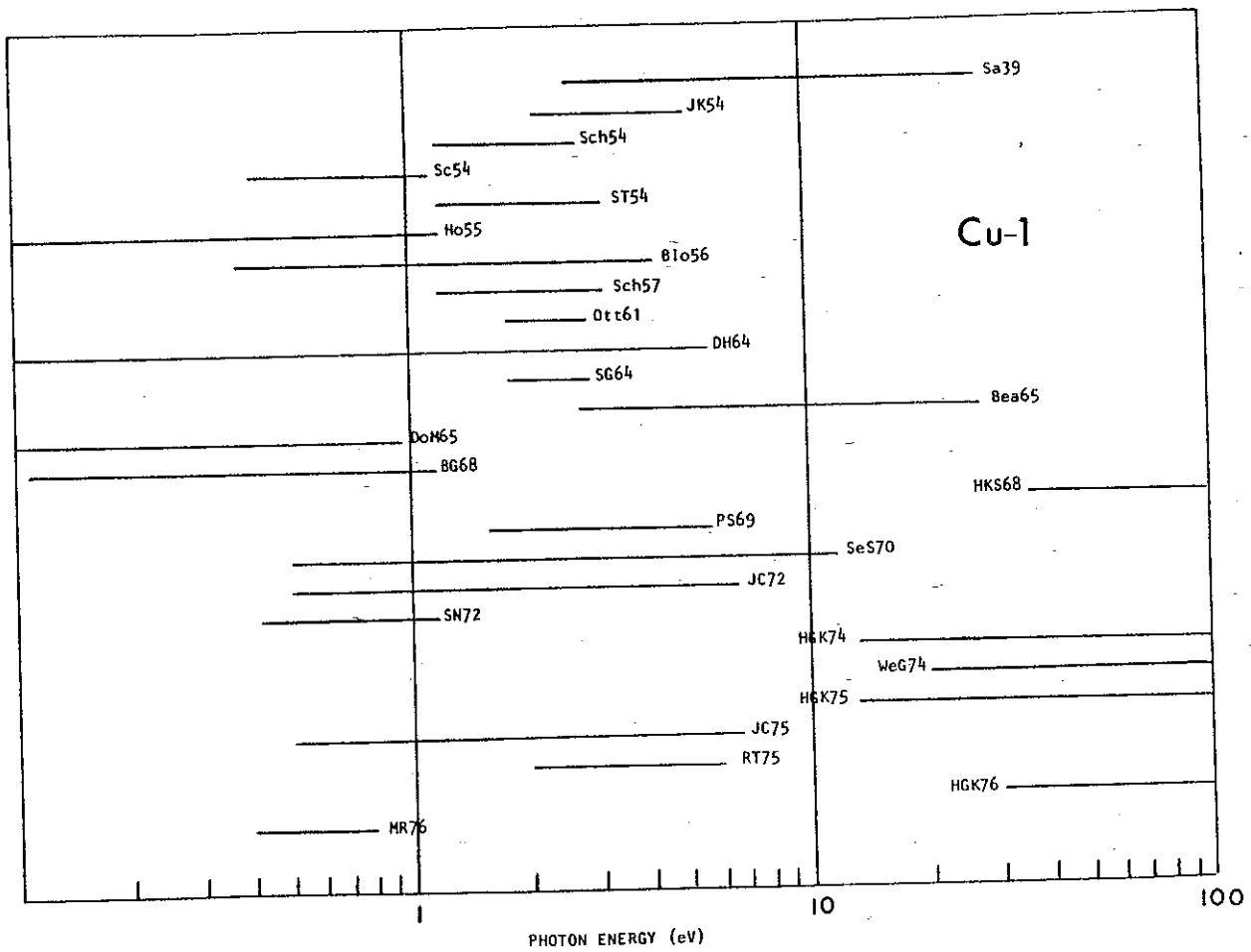

Fig. 2 Survey of available data on Cu.

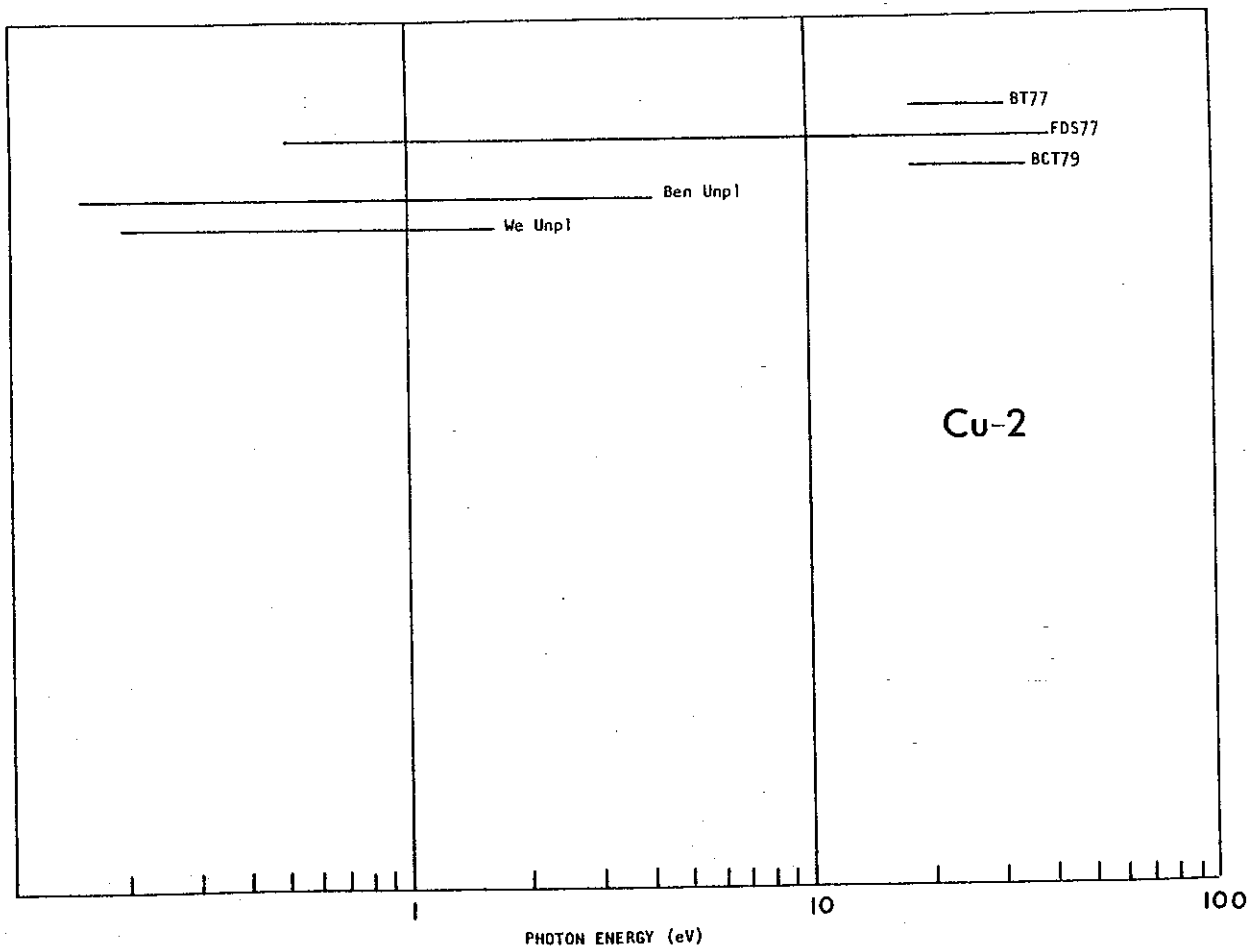

Fig. 2 Survey of available data on Cu.

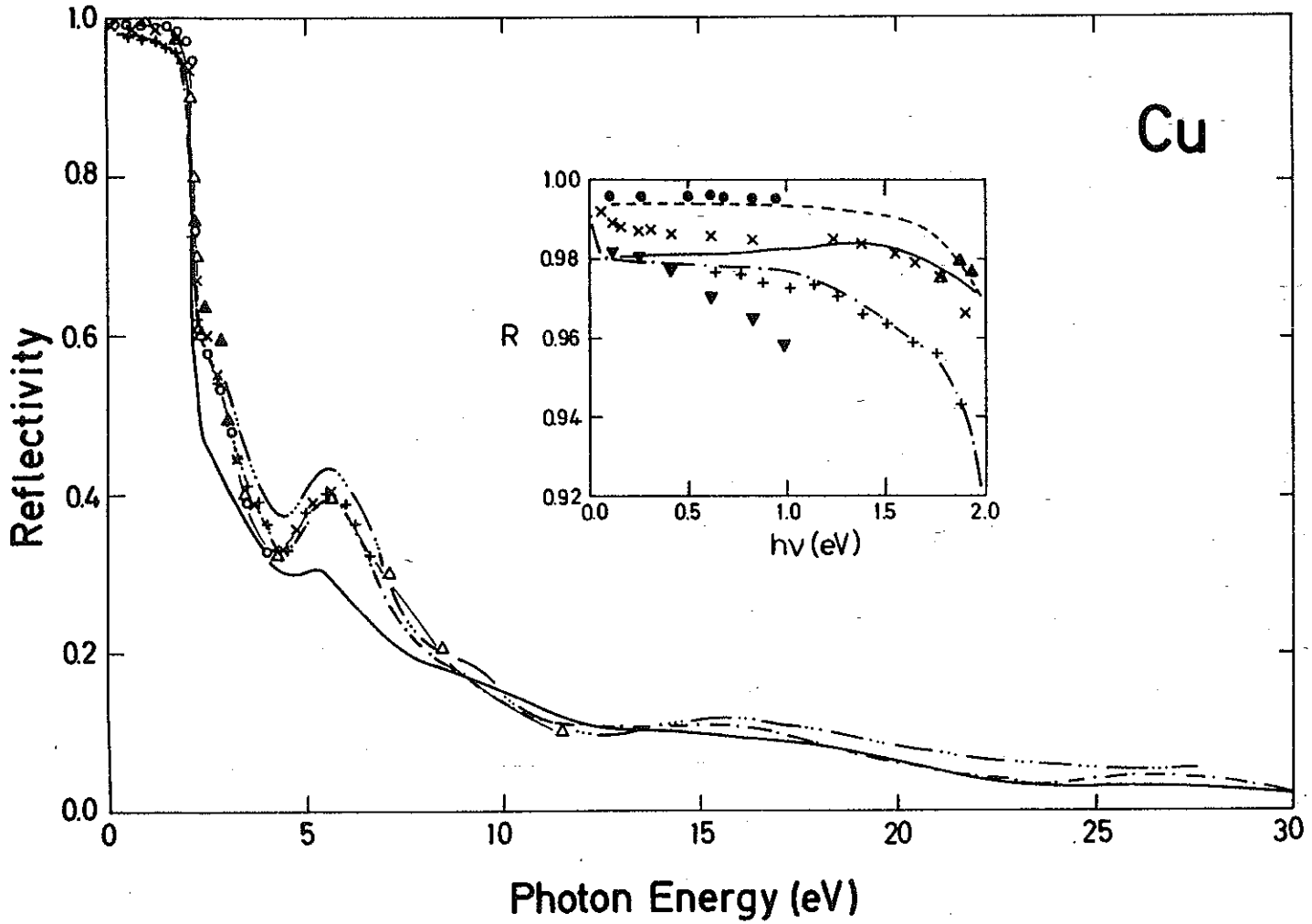

Fig. 3 Reflectivity of Cu. Results by Wea Unpub. (---); Ben Unpub (ooo); DH64 (xxx), SS70 (ΔΔΔ), JC72 (+++), BG68 (●●●); FDS77 (——); DoM65 (▼▼▼); Ott61 (▲▲▲); HGK75 (—·—); Bea65 (—···—).

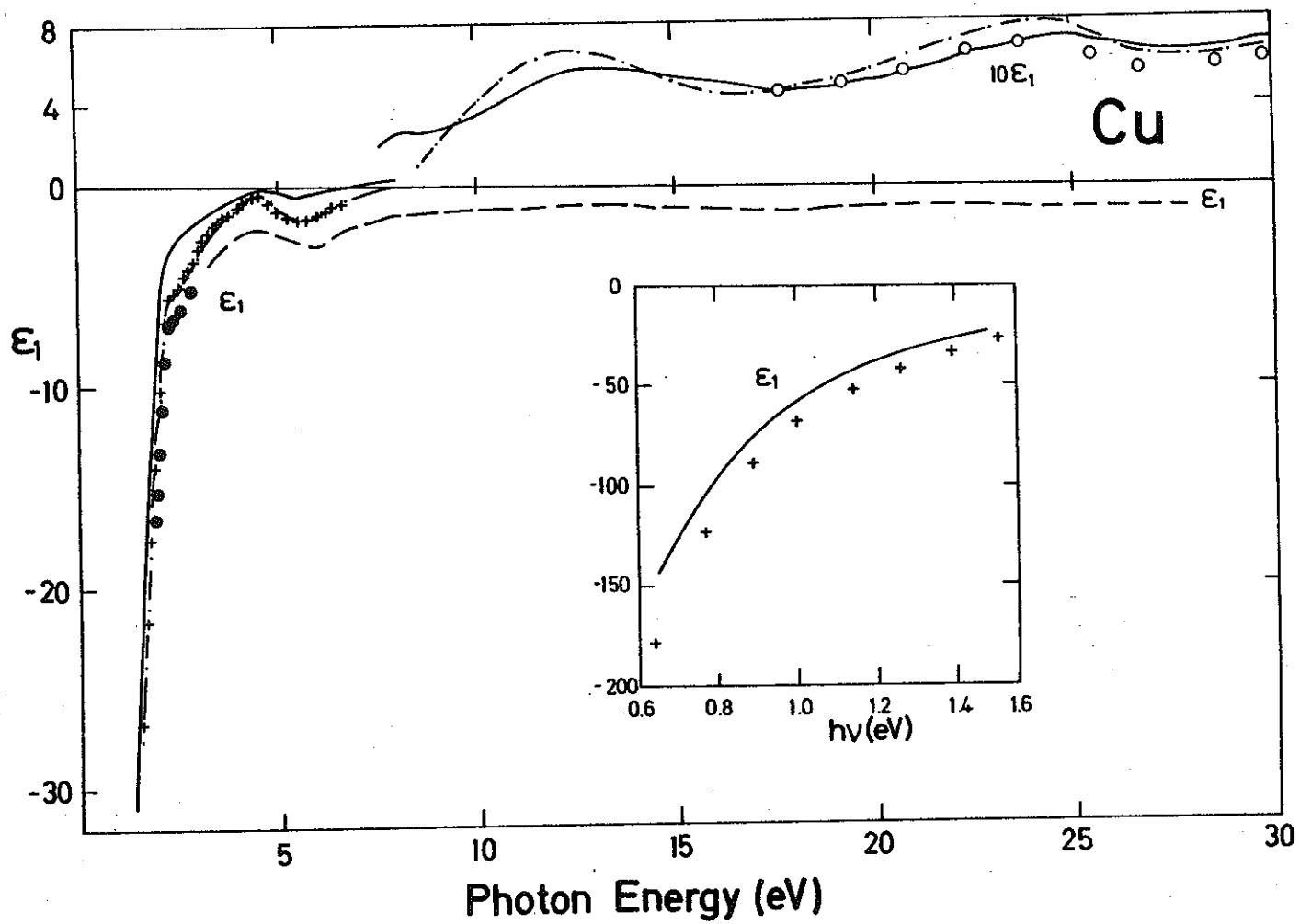

Fig. 4 ε_1 for Cu. Results by JC72 (+++); BCT79 (ooo); Ott61 (•••); FDS77 (——); HGK75 (—·—); Bea65 (---).

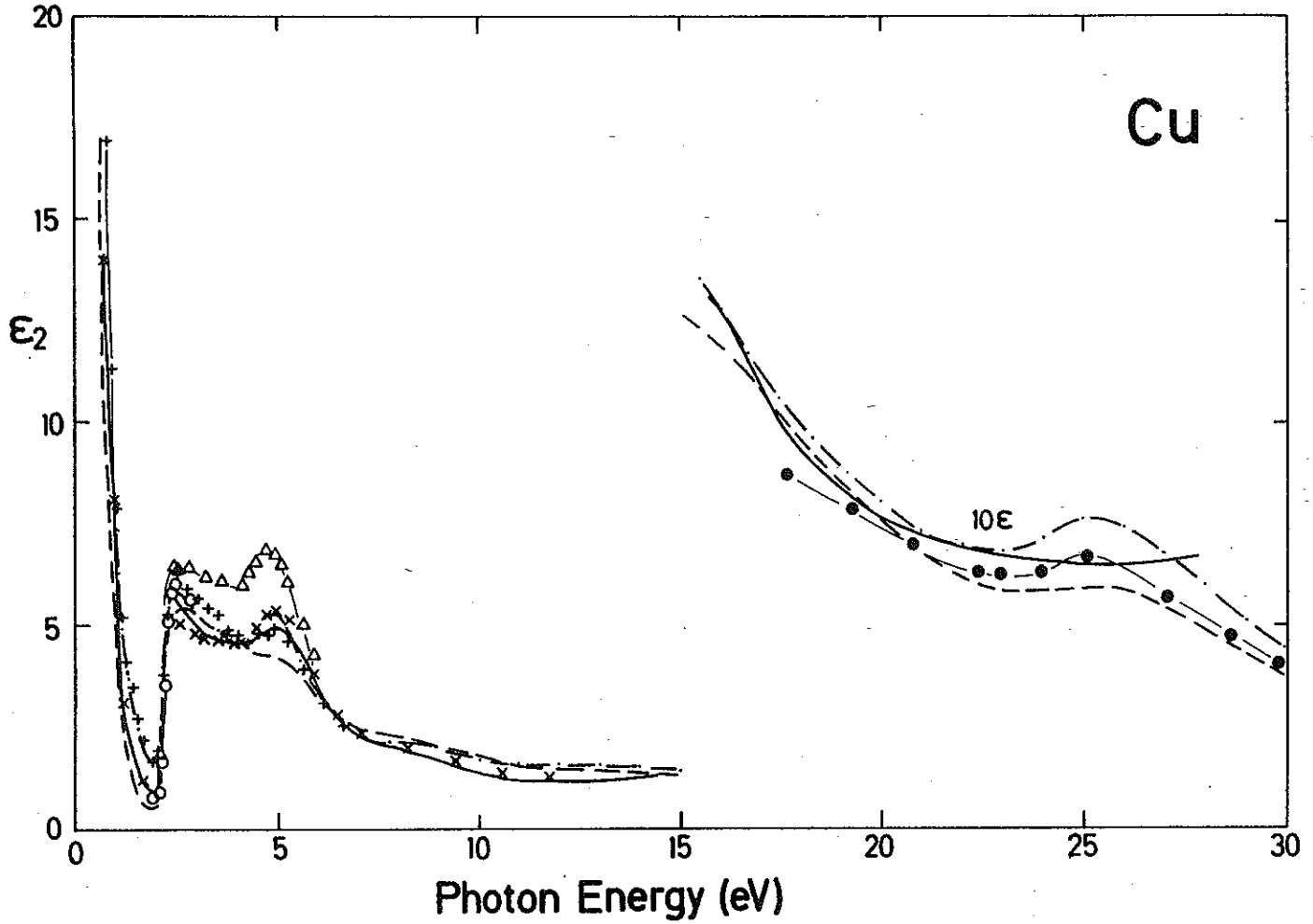

Fig. 5 ε_2 for Cu. Results by Bea65 (——); JC72 (+++); SS70 (xxx); RT75 (ΔΔΔ), Ott61 (ooo); BCT79 (●●●); FDS77 (---); HGK75 (—·—).

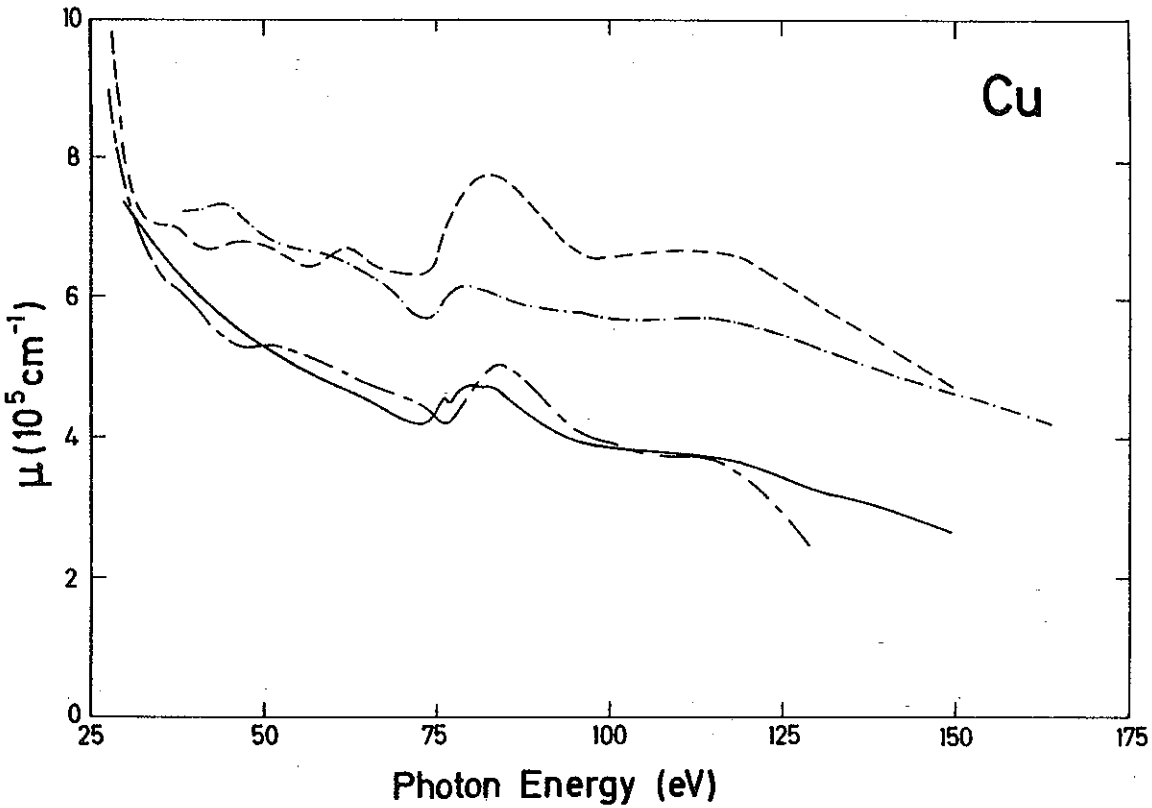

Fig. 6 Absorption coefficient for Cu. Results by HKS68 (—·—); WG74 (— - —); HGK75 (---); HGK74 (——).

Copper

publication by H.J. Hagemann, W. Gudat, and C. Kunz in J. Opt. Soc. Am. 65, 742 (1975) based on the following tabulation

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
0.10	-4240.00	4250.00	29.69	71.57	0.00	.980
0.50	-308.00	60.40	1.71	17.63	0.00	.979
1.00	-71.80	7.39	0.44	8.48	0.00	.976
1.50	-27.60	2.73	0.26	5.26	0.00	.965
1.70	-19.60	1.96	0.22	4.43	0.01	.958
1.75	-18.00	1.82	0.21	4.25	0.01	.956
1.80	-16.30	1.72	0.21	4.04	0.01	.952
1.85	-14.80	1.66	0.22	3.85	0.01	.947
1.90	-13.40	1.57	0.21	3.67	0.01	.943
2.00	-10.40	1.76	0.27	3.24	0.02	.910
2.10	-7.67	2.63	0.47	2.81	0.04	.814
2.20	-6.09	4.30	0.83	2.60	0.08	.673
2.30	-5.64	5.38	1.04	2.59	0.09	.618
2.40	-5.52	5.83	1.12	2.60	0.09	.602
2.60	-4.94	5.77	1.15	2.50	0.10	.577
2.80	-4.22	5.52	1.17	2.36	0.11	.545
3.00	-3.47	5.23	1.18	2.21	0.13	.509
3.20	-2.76	5.09	1.23	2.07	0.15	.468
3.40	-2.20	4.96	1.27	1.95	0.17	.434
3.60	-1.79	4.90	1.31	1.87	0.18	.407
3.80	-1.48	4.82	1.34	1.81	0.19	.387
4.00	-1.15	4.62	1.34	1.72	0.20	.364
4.20	-0.68	4.66	1.42	1.64	0.21	.336
4.40	-0.47	4.87	1.49	1.64	0.20	.329
4.60	-0.47	5.07	1.52	1.67	0.20	.334
4.80	-0.59	5.26	1.53	1.71	0.19	.345
5.00	-1.01	5.23	1.47	1.78	0.18	.356
5.20	-1.33	4.95	1.38	1.80	0.19	.380
5.40	-1.55	4.55	1.28	1.78	0.20	.389
5.60	-1.61	4.11	1.18	1.74	0.21	.391
5.80	-1.58	3.69	1.10	1.67	0.23	.389
6.00	-1.46	3.30	1.04	1.59	0.25	.380
6.50	-0.96	2.62	0.96	1.37	0.34	.329
7.00	-0.50	2.34	0.97	1.20	0.41	.271
7.50	-0.19	2.20	1.00	1.09	0.45	.230
8.00	-0.01	2.12	1.03	1.03	0.47	.206
8.50	0.10	2.02	1.03	0.98	0.49	.189
9.00	0.20	1.89	1.03	0.92	0.52	.171
9.50	0.31	1.78	1.03	0.87	0.55	.154
10.00	0.41	1.70	1.04	0.82	0.56	.139
11.00	0.59	1.62	1.07	0.75	0.55	.118
12.00	0.66	1.60	1.09	0.73	0.54	.111
13.00	0.65	1.57	1.08	0.72	0.54	.109
14.00	0.59	1.53	1.06	0.72	0.57	.111
14.50	0.56	1.48	1.03	0.72	0.59	.111
15.00	0.52	1.43	1.01	0.71	0.62	.111
15.50	0.48	1.36	0.98	0.69	0.65	.109
16.00	0.46	1.26	0.95	0.67	0.69	.106
17.00	0.45	1.13	0.91	0.62	0.76	.097

Cu

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
18.00	0.48	1.00	0.89	0.56	0.82	.084
19.00	0.52	0.90	0.88	0.51	0.83	.071
20.00	0.57	0.80	0.88	0.45	0.83	.059
21.00	0.63	0.74	0.90	0.41	0.78	.048
22.00	0.70	0.70	0.92	0.38	0.72	.040
23.00	0.76	0.69	0.94	0.37	0.66	.035
24.00	0.79	0.72	0.96	0.37	0.63	.035
25.00	0.76	0.76	0.96	0.40	0.65	.040
26.00	0.69	0.74	0.92	0.40	0.73	.044
27.00	0.63	0.68	0.88	0.38	0.79	.043
28.00	0.62	0.60	0.86	0.35	0.80	.039
29.00	0.63	0.51	0.85	0.30	0.78	.032
30.00	0.66	0.45	0.86	0.26	0.70	.025
31.00	0.71	0.42	0.88	0.24	0.62	.020
32.00	0.74	0.40	0.89	0.22	0.56	.017
33.00	0.77	0.38	0.90	0.21	0.52	.015
34.00	0.79	0.37	0.91	0.20	0.49	.014
35.00	0.80	0.36	0.92	0.20	0.47	.013
36.00	0.81	0.35	0.92	0.19	0.45	.012
37.00	0.82	0.35	0.92	0.19	0.44	.011
38.00	0.83	0.33	0.93	0.18	0.42	.010
39.00	0.83	0.32	0.93	0.17	0.40	.009
40.00	0.85	0.31	0.93	0.17	0.38	.009
41.00	0.85	0.30	0.94	0.16	0.37	.008
42.00	0.86	0.30	0.94	0.16	0.36	.007
43.00	0.87	0.29	0.94	0.15	0.35	.007
44.00	0.88	0.29	0.95	0.15	0.34	.007
45.00	0.88	0.28	0.95	0.15	0.33	.006
46.00	0.88	0.28	0.95	0.15	0.32	.006
47.00	0.88	0.27	0.95	0.14	0.32	.006
48.00	0.89	0.27	0.95	0.14	0.31	.006
49.00	0.89	0.26	0.95	0.14	0.30	.005
50.00	0.89	0.25	0.95	0.13	0.30	.005
51.00	0.89	0.25	0.95	0.13	0.29	.005
52.00	0.89	0.24	0.95	0.13	0.28	.005
53.00	0.90	0.23	0.96	0.12	0.27	.004
54.00	0.90	0.23	0.96	0.12	0.26	.004
55.00	0.90	0.22	0.96	0.12	0.26	.004
56.00	0.91	0.22	0.96	0.11	0.25	.004
57.00	0.91	0.22	0.96	0.11	0.24	.004
58.00	0.92	0.21	0.96	0.11	0.24	.004
59.00	0.92	0.21	0.97	0.11	0.24	.003
60.00	0.92	0.21	0.97	0.11	0.23	.003
61.00	0.92	0.21	0.97	0.11	0.23	.003
62.00	0.92	0.21	0.97	0.11	0.23	.003
63.00	0.92	0.20	0.96	0.10	0.23	.003
64.00	0.92	0.20	0.96	0.10	0.22	.003
65.00	0.92	0.19	0.97	0.10	0.21	.003
66.00	0.93	0.19	0.97	0.10	0.21	.003
67.00	0.93	0.18	0.97	0.09	0.20	.003
68.00	0.93	0.18	0.97	0.09	0.20	.002
69.00	0.93	0.18	0.97	0.09	0.20	.002
70.00	0.94	0.17	0.97	0.09	0.19	.002
75.00	0.96	0.17	0.98	0.09	0.18	.002
80.00	0.94	0.19	0.98	0.09	0.20	.002
85.00	0.93	0.17	0.97	0.09	0.20	.002
90.00	0.92	0.15	0.96	0.08	0.17	.002