Authors	Energy Range (eV)	Technique	Temperature (K) RT unless specified	Sample				Data Presentation	Remarks
				Film	X-tal	Bulk	Prep		Lu
Sch66	0.3-5.5	Refl		x				R	
ZFG67	60-470			x				μ	absorption measurements
Kun75	50-550			x				μ	absorption measurements with synchrotron radiation
WL75	0.2-4.4	Refl	4.2		x		EP	A; KK: σ for E⊥c and E∥c	absorptivity measured by calorimetry; discuss anisotropy
CGT76		Trans		x					energy loss spectroscopy
Pet76	1.6-6.2	Trans, Refl		x				σ	
KN77									review paper
Liu77									review paper covering band structure, optical and photoemission properties
Lyn78				x					review paper
OTM80	0-60				x			$Im(\varepsilon^{-1})$	energy loss spectroscopy

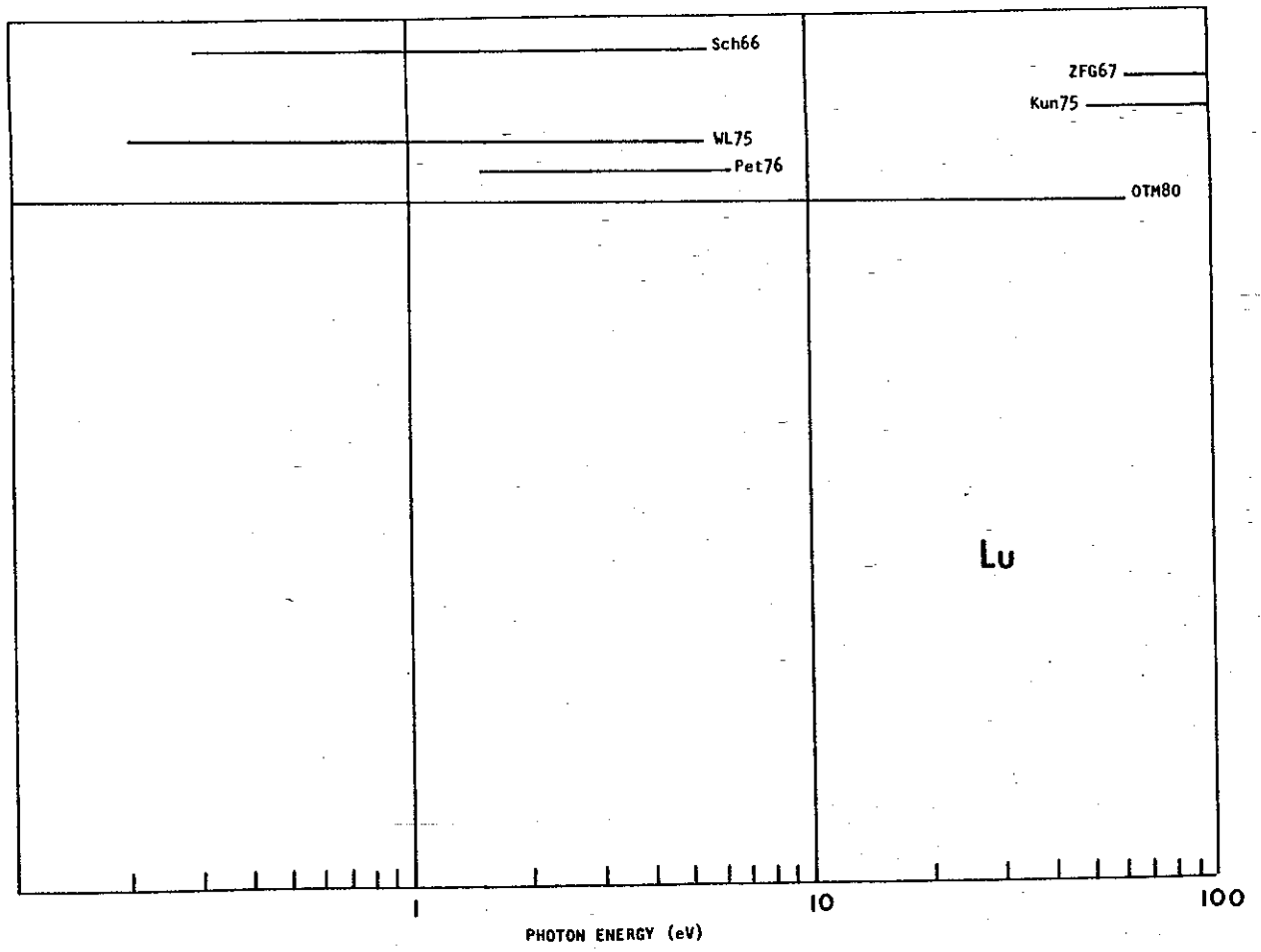

Fig. 87 Survey of available data on Lu.

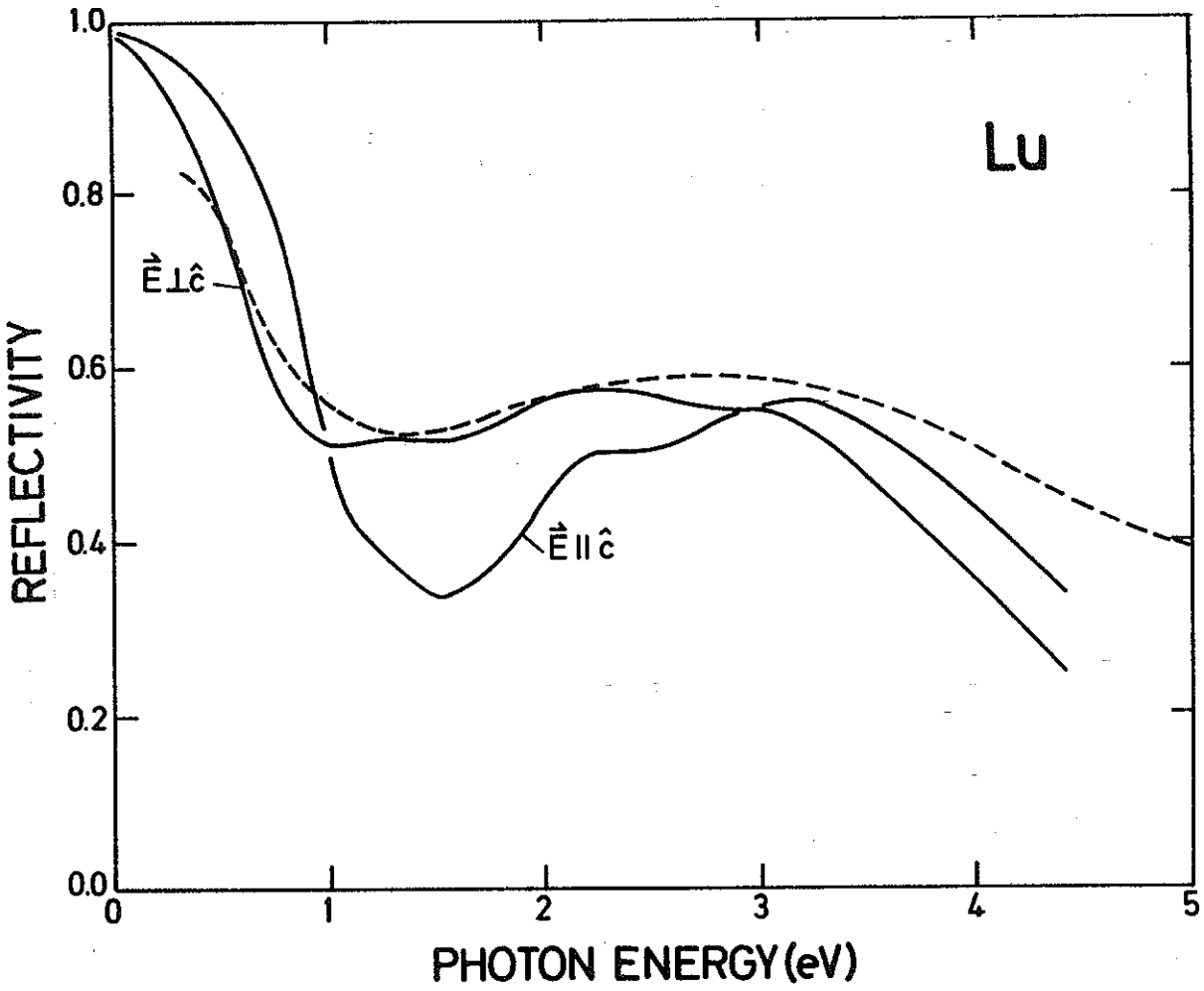

Fig. 88 Reflectivity for Lu. Single crystal results by WL75 (——) for $\vec{E} \parallel \hat{c}$ and $\vec{E} \perp \hat{c}$; polycrystalline results by Sch66 (---).

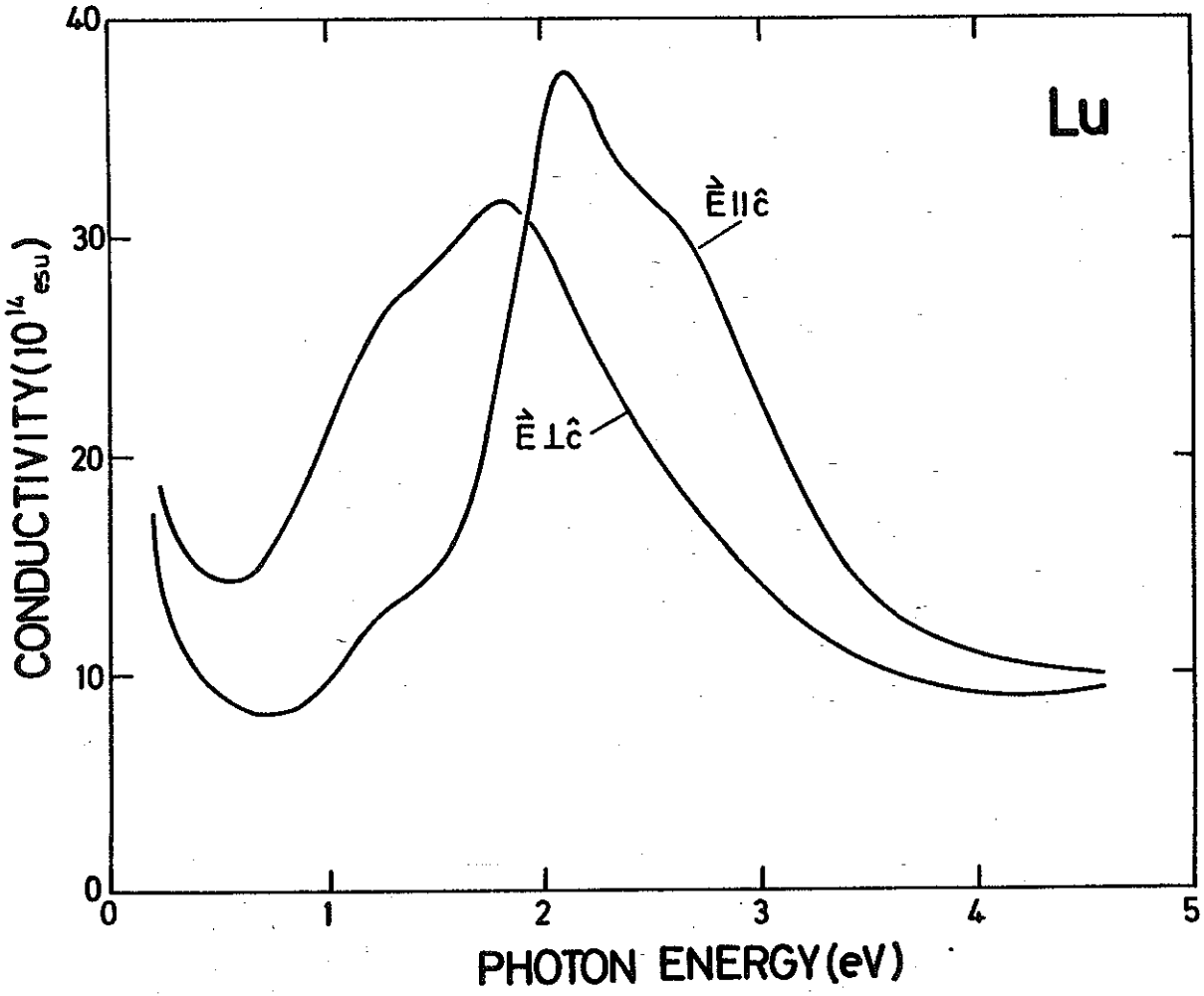

Fig. 89 Optical conductivity for Lu. Single crystal results by WL75 for $\vec{E}\parallel\hat{c}$ and $\vec{E}\perp\hat{c}$.

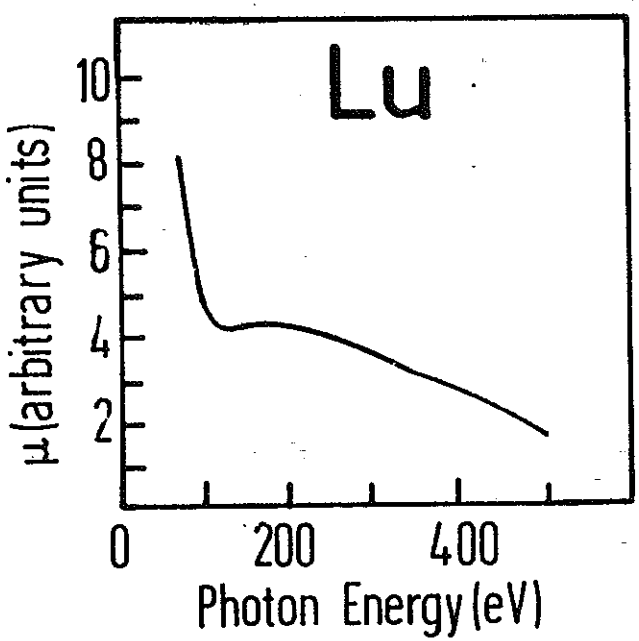

Fig. 90 Absorption coefficient of Lu. FZG67 show fine structure below the onset of the large maxima. Fine structure is interpolated by ZFG67 in the expanded energy range.

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

publication by J.H. Weaver and D.W. Lynch in Phys. Rev. Lett. 34, 1324 (1975) based on the following tabulation

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
0.08	1548.75	616.83	40.10	4.48	0.00	.821
0.10	1042.02	350.70	32.72	4.04	0.00	.796
0.15	-487.04	139.55	3.13	1.25	0.00	.107
0.20	-277.88	69.62	2.07	1.02	0.00	.043
0.25	-175.78	45.42	1.70	0.92	0.00	.027
0.30	-120.17	32.44	1.47	0.86	0.00	.020
0.35	-86.27	26.20	1.39	0.84	0.00	.018
0.40	-64.72	21.91	1.34	0.82	0.00	.016
0.45	-50.13	19.31	1.34	0.82	0.01	.016
0.50	-40.01	16.58	1.28	0.80	0.01	.015
0.55	-32.18	14.60	1.26	0.79	0.01	.015
0.60	-26.25	12.88	1.22	0.78	0.02	.014
0.65	-21.48	11.34	1.19	0.77	0.02	.014
0.70	-17.45	10.06	1.16	0.76	0.02	.013
0.75	-13.98	9.02	1.15	0.76	0.03	.013
0.80	-10.88	8.44	1.20	0.78	0.04	.014
0.85	-8.32	8.21	1.30	0.81	0.06	.015
0.90	-6.31	8.05	1.40	0.84	0.08	.018
0.95	-4.54	8.00	1.53	0.87	0.09	.021
1.00	-3.10	8.04	1.66	0.91	0.11	.026
1.05	-1.85	8.18	1.81	0.95	0.12	.031
1.10	-1.04	8.41	1.93	0.98	0.12	.037
1.15	-0.41	8.50	2.01	1.00	0.12	.041
1.20	0.07	8.51	2.07	1.02	0.12	.043
1.25	0.59	8.42	2.12	1.03	0.12	.046
1.30	1.04	8.36	2.18	1.04	0.12	.049
1.35	1.50	8.25	2.22	1.05	0.12	.051
1.40	1.99	8.16	2.28	1.07	0.12	.054
1.45	2.47	8.12	2.34	1.08	0.11	.058
1.50	3.09	8.03	2.42	1.10	0.11	.062
1.55	3.74	8.23	2.53	1.12	0.10	.069
1.60	4.30	8.61	2.64	1.15	0.09	.076
1.65	4.75	9.09	2.74	1.17	0.09	.082
1.70	5.11	9.67	2.83	1.19	0.08	.088
1.75	5.34	10.36	2.92	1.21	0.08	.093
1.80	5.43	11.14	2.99	1.22	0.07	.098
1.85	5.25	12.08	3.03	1.23	0.07	.101
1.90	4.94	12.86	3.06	1.24	0.07	.103
1.95	4.24	13.91	3.06	1.24	0.07	.103
2.00	3.11	14.57	3.00	1.22	0.07	.099
2.10	0.57	14.79	2.77	1.18	0.07	.084
2.20	-1.36	13.69	2.49	1.12	0.07	.067
2.30	-2.27	12.32	2.26	1.06	0.08	.054
2.40	-2.70	11.29	2.11	1.03	0.08	.045
2.50	-3.08	10.55	1.99	1.00	0.09	.040
2.60	-3.59	9.84	1.86	0.96	0.09	.033
2.70	-4.05	9.00	1.71	0.92	0.09	.027
2.80	-4.38	8.06	1.55	0.88	0.10	.022
2.90	-4.47	7.14	1.41	0.84	0.10	.018

Lu $\vec{E} \| \hat{c}$

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
3.00	-4.50	6.26	1.27	0.80	0.11	.015
3.10	-4.39	5.38	1.13	0.75	0.11	.013
3.20	-4.08	4.61	1.02	0.71	0.12	.012
3.30	-3.69	4.04	0.94	0.69	0.13	.013
3.40	-3.34	3.59	0.88	0.66	0.15	.013
3.50	-2.99	3.22	0.84	0.65	0.17	.014
3.60	-2.65	2.92	0.80	0.63	0.19	.014
3.70	-2.34	2.71	0.79	0.63	0.21	.015
3.80	-2.09	2.52	0.77	0.62	0.24	.015
3.90	-1.84	2.36	0.76	0.62	0.26	.016
4.00	-1.62	2.23	0.75	0.61	0.29	.016
4.10	-1.42	2.13	0.75	0.61	0.33	.016
4.20	-1.24	2.04	0.76	0.62	0.36	.016
4.30	-1.07	1.98	0.77	0.62	0.39	.016
4.40	-0.97	1.87	0.75	0.61	0.42	.016
4.50	-0.78	1.81	0.77	0.62	0.47	.015
4.60	-0.66	1.78	0.79	0.63	0.49	.015
4.80	-0.47	1.71	0.81	0.64	0.54	.014
5.00	-0.32	1.64	0.82	0.64	0.59	.014

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

publication by J.H. Weaver and D.W. Lynch in Phys. Rev. Lett. 34, 1324 (1975) based on the following tabulation

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
0.10	-638.58	329.01	6.32	1.78	0.00	.307
0.15	-308.91	146.09	4.05	1.42	0.00	.169
0.20	-176.17	85.79	3.14	1.25	0.00	.108
0.25	-111.85	61.46	2.81	1.18	0.00	.086
0.30	-77.39	45.62	2.50	1.12	0.01	.068
0.35	-54.83	36.72	2.36	1.09	0.01	.059
0.40	-40.01	31.11	2.31	1.07	0.01	.056
0.45	-29.93	26.92	2.27	1.07	0.02	.054
0.50	-22.25	24.31	2.31	1.08	0.02	.056
0.55	-17.04	22.32	2.35	1.08	0.03	.058
0.60	-13.23	20.27	2.34	1.08	0.03	.058
0.65	-9.44	18.72	2.40	1.10	0.04	.061
0.70	-6.17	17.99	2.53	1.13	0.05	.069
0.75	-4.01	17.76	2.66	1.15	0.05	.077
0.80	-2.35	17.62	2.78	1.18	0.06	.084
0.85	-1.26	17.61	2.86	1.20	0.06	.090
0.90	-0.42	17.54	2.93	1.21	0.06	.094
0.95	0.13	17.53	2.97	1.22	0.06	.097
1.00	0.61	17.50	3.01	1.23	0.06	.099
1.05	0.83	17.61	3.04	1.23	0.06	.101
1.10	0.80	17.69	3.04	1.23	0.06	.101
1.15	0.66	17.66	3.03	1.23	0.06	.101
1.20	0.38	17.58	3.00	1.22	0.06	.099
1.25	0.08	17.37	2.95	1.22	0.06	.096
1.30	-0.25	17.09	2.90	1.20	0.06	.092
1.35	-0.51	16.72	2.85	1.19	0.06	.089
1.40	-0.71	16.37	2.80	1.18	0.06	.086
1.45	-0.87	16.05	2.76	1.17	0.06	.083
1.50	-1.00	15.82	2.72	1.17	0.06	.081
1.55	-1.26	15.67	2.69	1.16	0.06	.079
1.60	-1.53	15.50	2.65	1.15	0.06	.076
1.65	-1.90	15.36	2.61	1.14	0.06	.074
1.70	-2.35	15.15	2.55	1.13	0.06	.070
1.75	-2.82	14.88	2.48	1.11	0.06	.066
1.80	-3.32	14.57	2.41	1.10	0.07	.062
1.85	-3.91	14.15	2.32	1.08	0.07	.057
1.90	-4.43	13.58	2.22	1.05	0.07	.051
1.95	-4.82	12.93	2.12	1.03	0.07	.046
2.00	-5.16	12.27	2.02	1.00	0.07	.041
2.10	-5.61	10.85	1.82	0.95	0.07	.032
2.20	-5.65	9.50	1.64	0.91	0.08	.025
2.30	-5.48	8.36	1.50	0.87	0.08	.021
2.40	-5.22	7.43	1.39	0.83	0.09	.018
2.50	-4.97	6.63	1.29	0.80	0.10	.015
2.60	-4.68	5.91	1.20	0.77	0.10	.014
2.70	-4.36	5.33	1.12	0.75	0.11	.013
2.80	-4.08	4.82	1.06	0.73	0.12	.013
2.90	-3.82	4.35	0.99	0.70	0.13	.012
3.00	-3.58	3.89	0.92	0.68	0.14	.013

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

Energy (eV)	ε_1	ε_2	n	k	Im(-1/$\tilde{\varepsilon}$)	R(ϕ=0)
3.10	-3.27	3.47	0.87	0.66	0.15	.013
3.20	-2.95	3.13	0.82	0.64	0.17	.014
3.30	-2.65	2.86	0.79	0.63	0.19	.015
3.40	-2.37	2.62	0.76	0.62	0.21	.016
3.50	-2.09	2.42	0.74	0.61	0.24	.016
3.60	-1.84	2.26	0.73	0.61	0.27	.017
3.70	-1.60	2.15	0.73	0.61	0.30	.017
3.80	-1.40	2.04	0.73	0.61	0.33	.017
3.90	-1.20	1.95	0.74	0.61	0.37	.017
4.00	-1.03	1.87	0.74	0.61	0.41	.016
4.10	-0.87	1.80	0.75	0.61	0.45	.016
4.20	-0.72	1.75	0.77	0.62	0.49	.016
4.30	-0.57	1.70	0.78	0.63	0.53	.015
4.40	-0.43	1.68	0.81	0.64	0.56	.014
4.50	-0.31	1.67	0.83	0.65	0.58	.014
4.60	-0.23	1.67	0.85	0.65	0.59	.014
4.80	-0.10	1.64	0.88	0.66	0.61	.013
5.00	0.00	1.60	0.89	0.67	0.62	.013

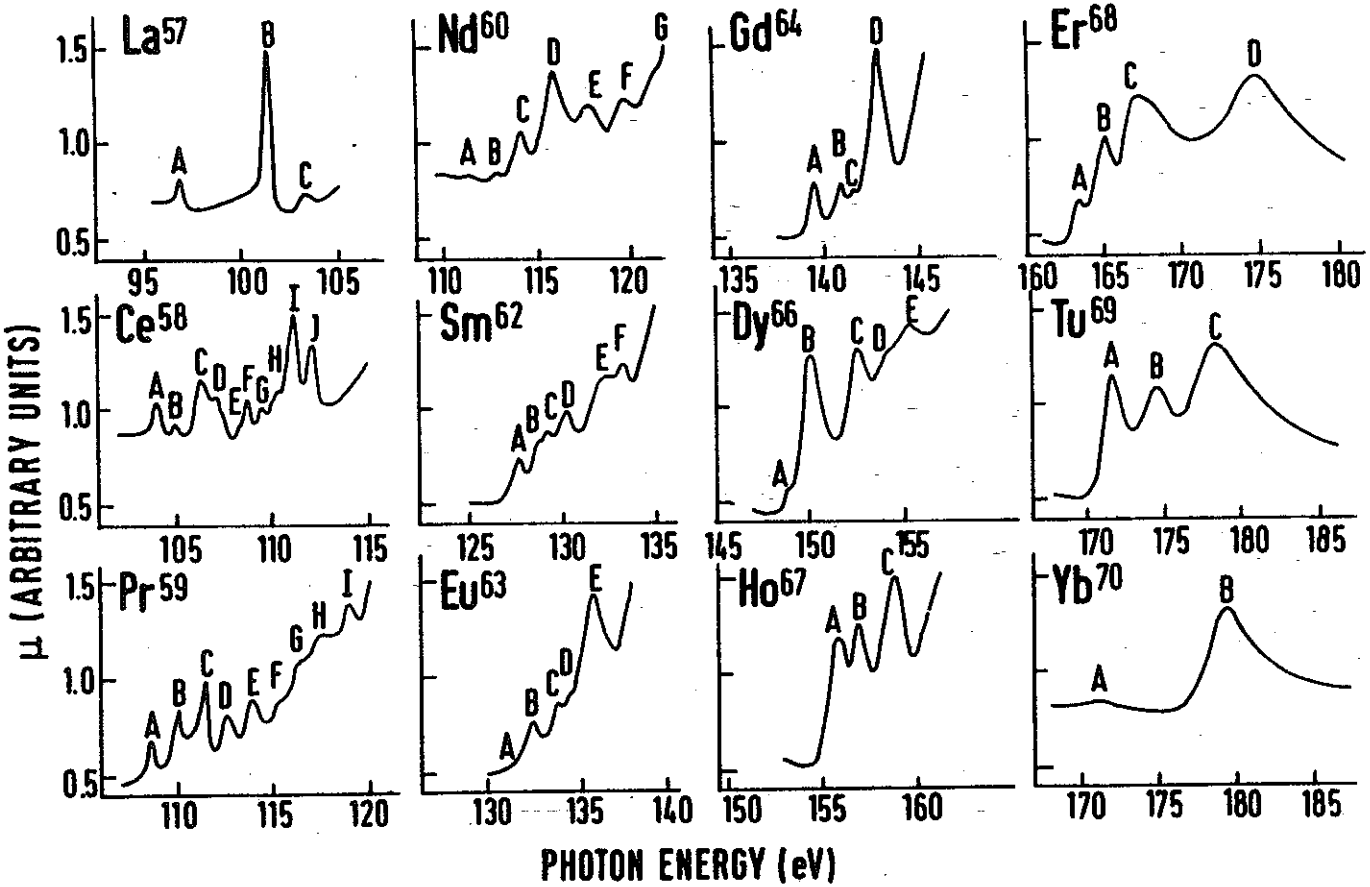

Fig. 91 Summary of the optical absorption coefficients for the rare earths, showing fine structure below the onset of the large maxima. Reported by FZG67.

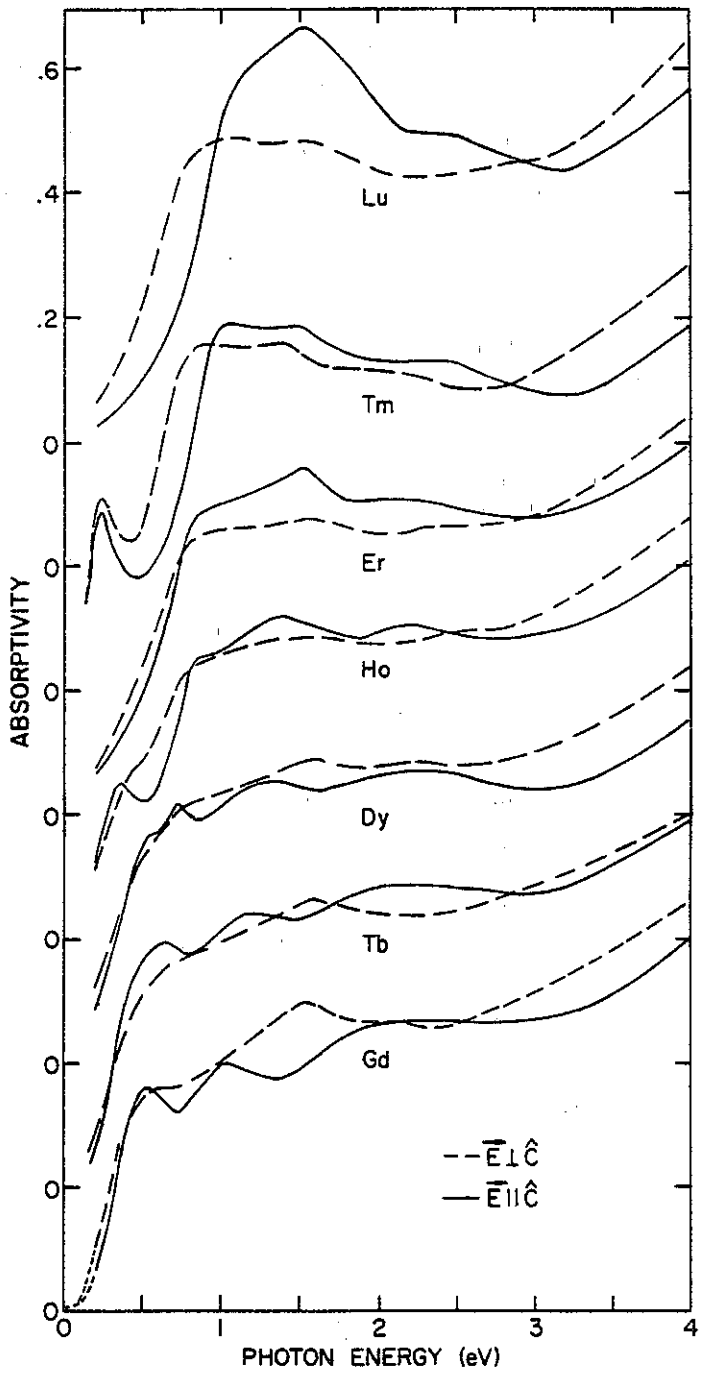

Fig. 92 Summary of the optical absorptivity (A = 1-R where R is the reflectivity) for the heavy rare earths reported by WL75 for single crystals at 4.2 K.

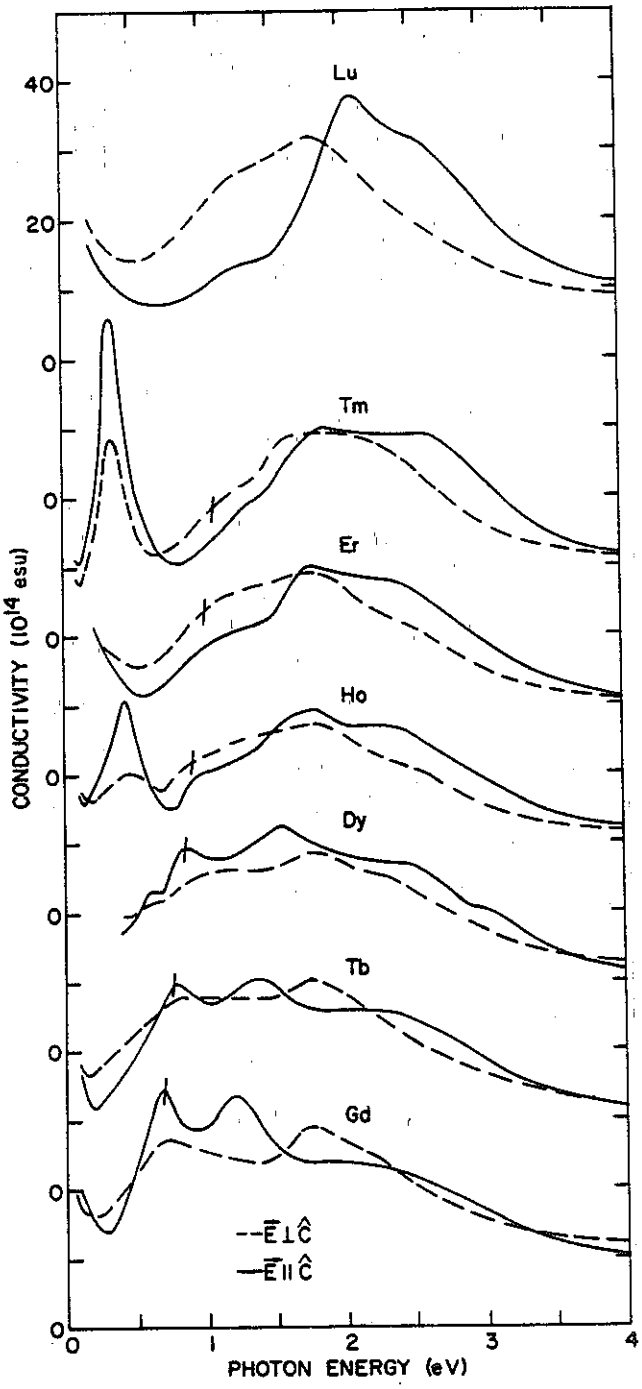

Fig. 93 Summary of the optical conductivity for the heavy rare earths reported by WL75 for single crystals at 4.2 K.