

Electronic Supplementary Information

High-accuracy experimental determination of photon mass attenuation coefficients of transition metals and lithium fluoride in the ultra-soft energy range

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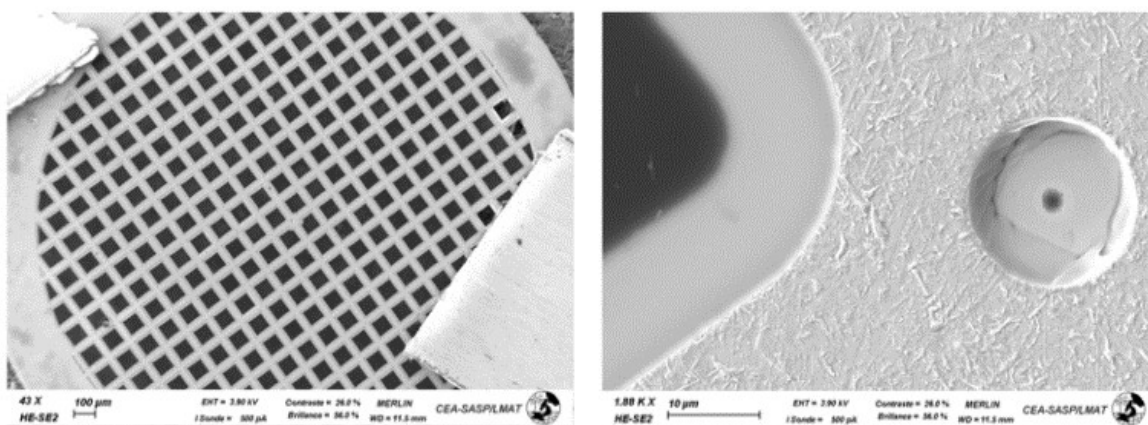


Figure 1 SEM images of a TEM grid covered with a carbon membrane.

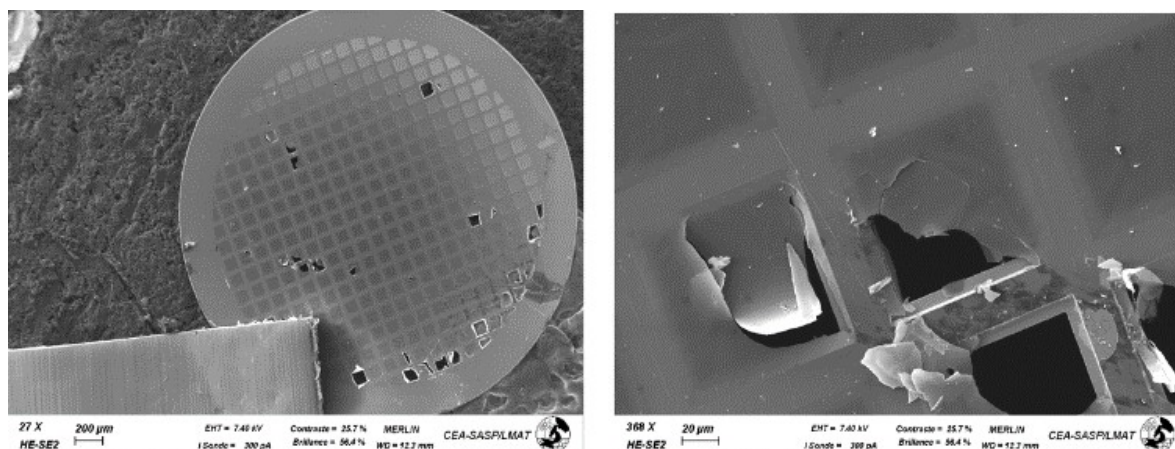


Figure 2 LiF layer of 220 nm on TEM grid (left) and zoom on defects (right).

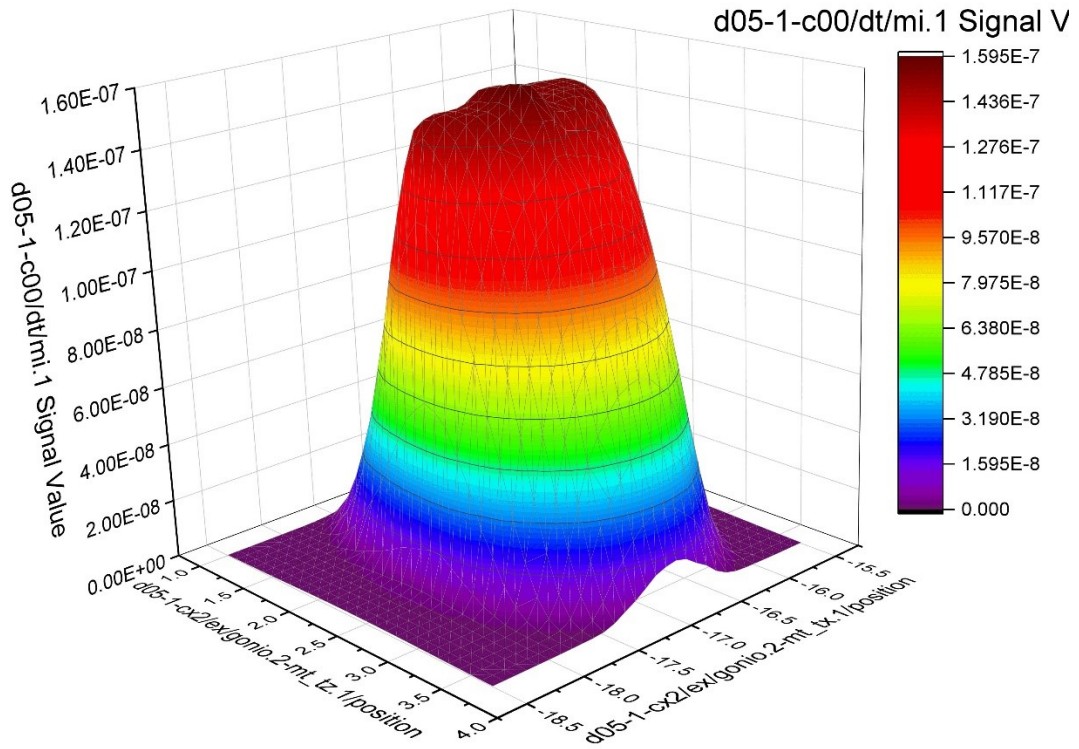


Figure 3 Two-dimensional scan of the transmitted photon intensity through a copper sample.

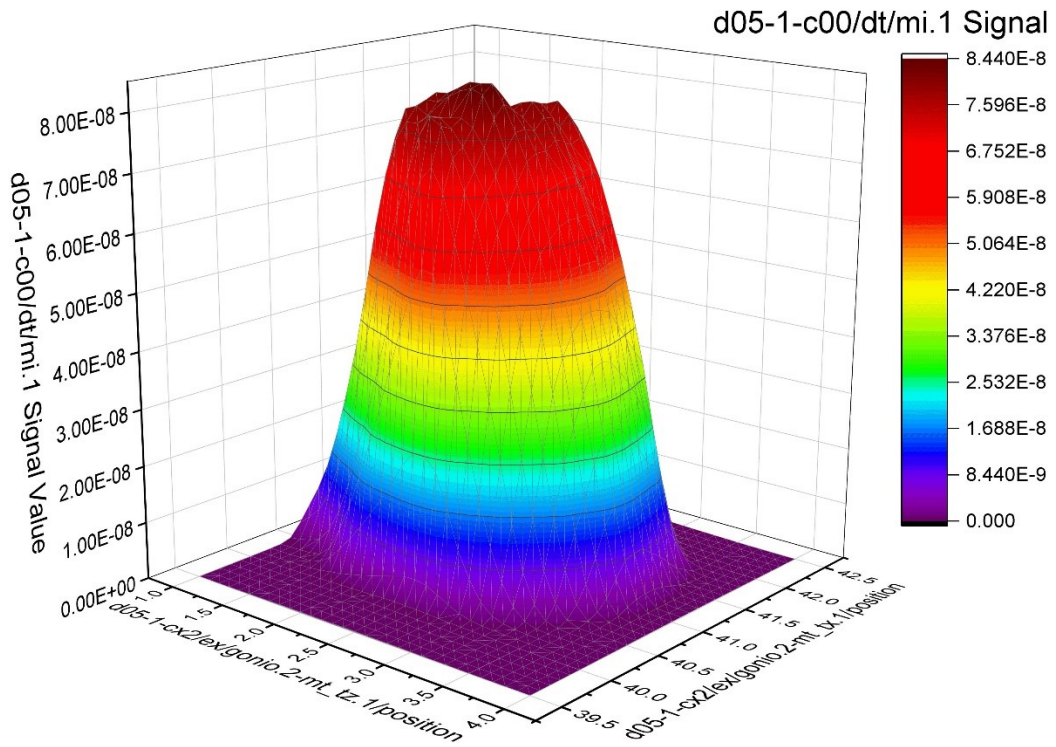


Figure 4 Two-dimensional scan of the transmitted photon intensity through a iron sample.

Table A Fitted parameters and the related standard errors that were used to determine the photon mass attenuation coefficient following equation 2 and the values of the uncertainties following equation 3.

Element	sample	Fitted parameters			Standard error		
		M (g/cm ²)	O	F	σ_M (g/cm ²)	σ_O	σ_F
LiF	1	1.59641 E-5	0.41419	0	4.38912 E-7	0.02336	0.04113
	2	2.24914 E-5	0.40842	0	7.58891 E-7	0.03424	0.048
	3	6.78378 E-5	0.23813	0	8.49796 E-7	0.00476	0.00584
Al	1	1.46848 E-5	0.16799	0.1531	4.65074 E-7	0.02828	0.00592
	2	6.78865 E-5	0.29453	0.08041	1.83607 E-7	0.00146	0.00114
Cr	1	4.21124 E-5	0.16799	0.1531	2.36947 E-6	0.04329	0.02899
	2	1.41995 E-4	0.34813	0.16451	2.42538 E-6	0.01743	0.01573
Mn	1	4.40688 E-5	0.11492	0.08861	2.14032 E-7	0.00217	0.00453
Fe	1	4.33146 E-5	0.25797	0.11192	1.47302 E-7	0.00121	0.00186
Co	1	2.2903 E-5	0.14828	1 E-6	3.15248 E-6	0.00391	0.21798
Ni	1	4.98998 E-5	0.19684	1 E-4	2.94945 E-6	0.13966	0.02571
	2	7.06635 E-5	0.18234	0.01061	2.15407 E-7	0.00132	8.2153 E-4
Cu	1	2.66887 E-5	0.18407	1 E-8	1.68909 E-6	0.12115	0.03548
	2	5.1788 E-5	0.13465	1 E-8	4.29113 E-7	0.01077	0.00746
	3	3.13507 E-4	0.07885	5.0555 E-5	9.7888 E-7	0.0073	0.00117