X-ray Anodes used for Photoelectron Spectroscopy

Technical Notes

X-ray sources for photoelectron spectroscopy are used with different types of anode coatings.
The XR-50 is the SPECS X-ray source with a high intensity twin anode. In the standard configuration the anode of the source is coated on one side with Aluminum given an X-ray K line at 1486.6 eV and with Magnesium on the other side given a K line with 1253.6 eV. Other coatings available include:

- Titanium
- Zirconium
- Silver
- Gold
- Yttrium

Coatings which are not in the list may available on request.

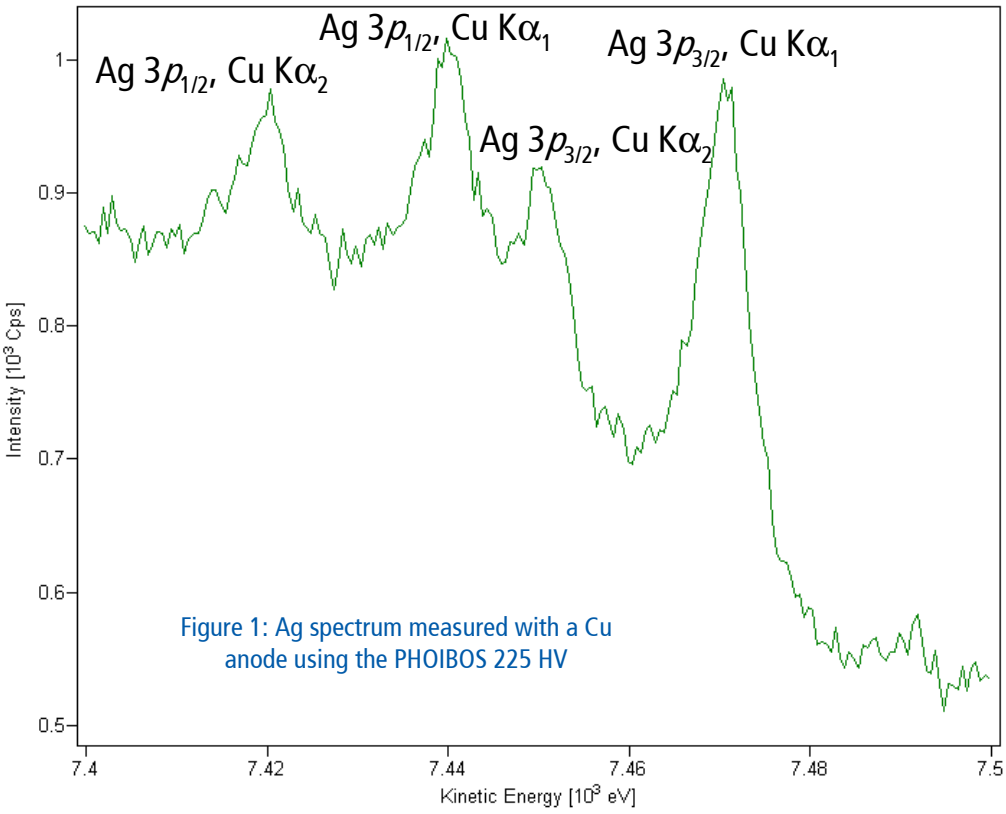

Figure 1: Ag spectrum measured with a Cu anode using the PHOIBOS 225 HV

Element	Energy (eV)	Wavelength (Å)	Line width (eV)	Ref.
Y M_{γ}	132.3	93.7	0.45	1
Zr M_{γ}	151.4	81.9	0.77	1
Nb M_{γ}	171.4	72.3	1.21	1
Mo M_{γ}	192.3	64.5	1.53	1
Rh M_{γ}	260.4	47.6	4.00	1
C $K_{\alpha 12}$	276.2	44.9		2
O $K_{\alpha 12}$	521.0	23.8		2
Ni $K_{\alpha 12}$	853.4	14.528		2
Cu L_{α}	931.6	13.308		2
Na $K_{\alpha 12}$	1043.7	11.88	(0.50)	2 (3)
Mg $K_{\alpha 12}$	1253.6	9.89	0.68 (0.61)	1 (3)
Al $K_{\alpha 12}$	1486.6	8.34	0.83	1
Ag L_{α}	2984.3	4.1544	2.6	4
Ti $K_{\alpha 12}$	4510	2.75	2.0	1
Cr $K_{\alpha 12}$	5417	2.29	2.1	1
Cu $K_{\alpha 1}$	8055	1.54	2.55	1

$$\lambda\ (\text{Å}) = 12.398 \times 10^3 / E\ (\text{eV})$$

References:

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[3] Banna, M. S.; Shirley, D. A. J. Chem. Phys. 1975, 63, 4759–4766.
[4] K. Yates and R.H. West, Surface and Interface Analysis, Vol. 5, No. 4, 1983, page 133. (and Refs. In there)

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