

XPS (X-ray Photoelectron Spectroscopy)

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XPS (X-ray Photoelectron Spectroscopy)/ESCA (Electron Spectroscopy for Chemical Analysis) is used to obtain both elemental and chemical information about a sample surface. When the surface of sample is excited with X-rays, high resolution energy analysis of photo-electrons emitted from atoms near the surface can be used to characterize a variety of inorganic and organic materials.

Model

PHI 5000 VersaProbe (ULVAC PHI, Japan)

Specifications

- Min. spatial resolution : 10 μm
- Min. resolution : 0.48 eV (Ag 3d_{5/2})
- Source : Monochromatized Al Kα
- Automated specimen stage : X, Y, Z, R, T
- Ion etch gun (Ar⁺)
- Dual beam charge neutralization
- Scanning electron gun (AES/SEM), UPS

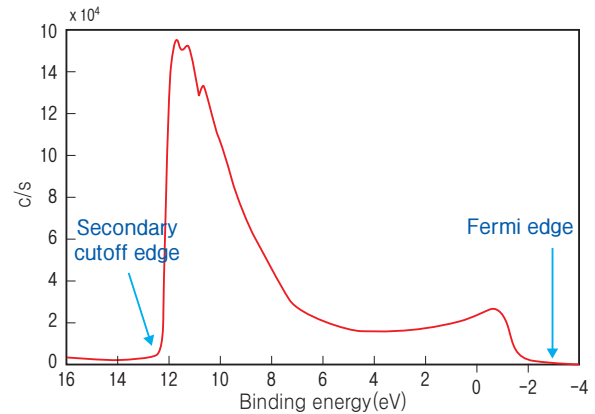
Applications

- Identifying elements of surface
- Chemical state identification
- Quantitative analysis
- Depth profiling
- Multipoint/Line scan/Area scan analysis
- Image mapping analysis
- Work function measurement



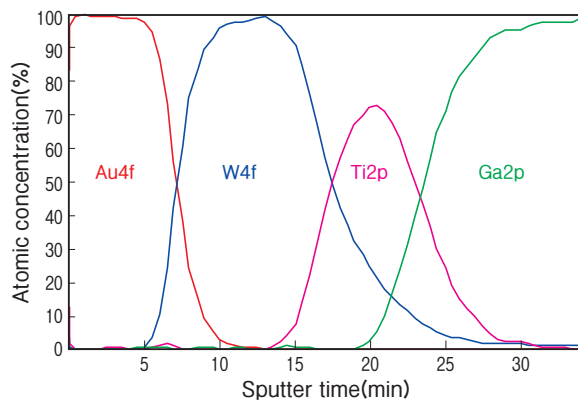
Location L5113B Tel.02-958-5975

UPS(Ultraviolet photoelectron spectroscopy) of ITO



**We can know work function ($\phi = h\nu - (E_F - E_{\text{cutoff}})$)

Depth profile of multilayer (Au/W/Ti/Ga)



Curve fitting

