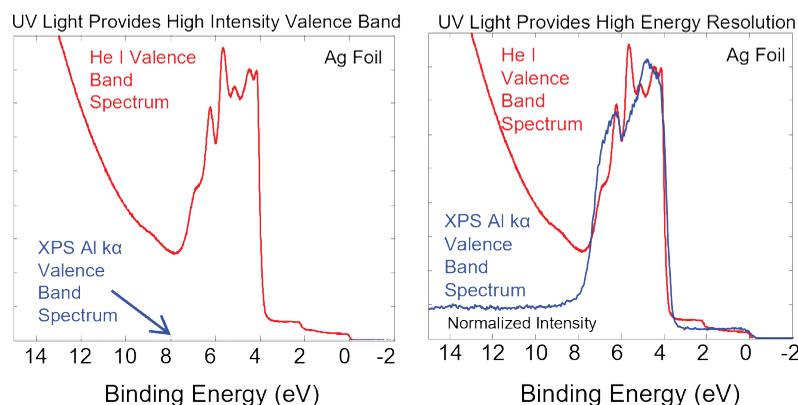


## Ultra-Violet Photoelectron Spectroscopy (UPS)

Ultra-Violet Photoelectron Spectroscopy (UPS) is a surface analysis technique in which a specimen is irradiated with UV light and the kinetic energy of the electron generated from the highest occupied orbital is measured. In UPS, lower energy (21.2 eV, He I and 40.8 eV, He II) incident photons are used, compared to XPS, hence it is ideal for spectral acquisition of the valence electronic states. Two types of common measurements are performed with UPS: work function measurement and acquisition of valence band energy.

### Key Features of UPS

- UPS is used to collect valence band spectra
- Measure ionization energy and work function of metals and semiconductors
- UPS is more surface sensitive than XPS
- UPS has higher energy resolution than XPS



### OPTIONAL – UV SHUTTER

- Manual shutter available (Open/Filter/Closed).
- Filter allows ~3% transmission compared to shutter fully open, suitable to sensitive materials such as organics.

### VersaProbe UPS Hardware

The UPS upgrade is a dedicated UV photon source, Helium discharge lamp, with a He I (21.2 eV) and He II (40.8 eV) source setting and is operated using *SmartSoft* software. The UPS upgrade does not require additional pumping station.

Operating System requirement: Windows 10.

