

X-ray Photoelectron Spectroscopy (XPS)

Thermo VG Scientific XPS. This technique involves irradiating a sample with a monochromatic beam of X-rays, which causes photoemission from both the core and valence levels of surface atoms.

The kinetic energy of the electrons captured by the electron spectrometer is directly related to the binding energy of the photoelectron. Electrons which are excited and undergo inelastic scattering before reaching the electron spectrometer will suffer energy loss, and these electrons contribute to the “background” of a spectrum. XPS analysis of a surface allows the identification of the elements present and the chemical moieties in which they are present. UHV conditions are generally employed during XPS analysis in order to avoid contamination of the surface. Resolution, top 1-10 nm.

