

XPS (X-ray Photoelectron Spectrometer)



X-Ray Photoelectron Spectroscopy (XPS) provides information about the chemical state of the atoms on the solid sample surface. It is based on the principle of measuring the kinetic energy of electrons emitted from the surface when the atoms or molecules on the sample surface are bombarded with x-rays. XPS is used in the analysis of elements, inorganic compounds, metal alloys, semiconductors, polymers, catalysts, glass and ceramic samples, paints and inks, papers, makeup materials, teeth, bone specimens and medical prostheses.

XPS Applications:

- Determination of the chemical structure of the surface (0-10 nm from the top)
- Determination of simple formulas of pure substances
- Information about contaminated surfaces
- Determination of the chemical structure of the species present on the surface
- The diversity of elements / compounds found on the surface (line profile or mapping)
- Ion beam etching of element / compounds on the surface (depth profile)

Instrument Model: Thermo Scientific K-Alpha

Instrument Hardware and Features:

Analyzer:	180° hemispherical analyzer-128 channel detector
X-ray source:	Monochromatic, Al Ka
X-Ray spot size:	30-400 μm
Sampling area:	60 x 60 mm
Max. sample thickness:	20 mm
Ion gun (Argon):	Energy range 100-4000eV
Vacuum system:	2x 220L / s turbo molecular pump
Other options: ARXPS.	Depth profiling, instant data acquisition, sample tilt module for