XPS-LAB

scientaomicron

Versatile electron spectroscopy platform

The new XPS-Lab has been designed to combine outstanding quantitative XPS performance and ease of operation with a modular sample handling concept. The exceptional value of the XPS-Lab is based on the high-transmission, high-speed Argus CU hemispherical analyser.

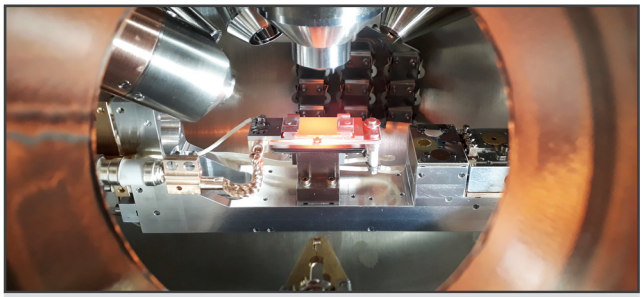
The versatile XPS-Lab incorporates advanced system, instrument and software technology based on Scienta Omicron's comprehensive electron spectroscopy and surface analysis experience. The XPS-Lab has been designed to combine outstanding quantitative XPS performance and ease of operation with a modular sample handling concept.

The XPS-Lab is configured with the high transmission Argus CU hemispherical analyser and high power monochromated Al Kα X-ray source, specifically combined to offer the highest sensitivity for quantitative XPS analysis. To complement and extend the standard XPS functionality, a broad range of dedicated options are available to ensure that the XPS-Lab can provide the experimental solutions your laboratory needs, no matter how diverse.

The XPS-Lab offers two sample handling concepts: The standard configuration is designed for small sample plates. It can either be directly integrated to Scienta Omicrons broad range of surface science instruments or serve as a standalone tool with an independent sample load lock, which allows the introduction of three sample plates during one loading/unloading cycle.

The alternative concept is based on the Large Sample Carrier with 30 cm^2 loading area for differently shaped specimens.

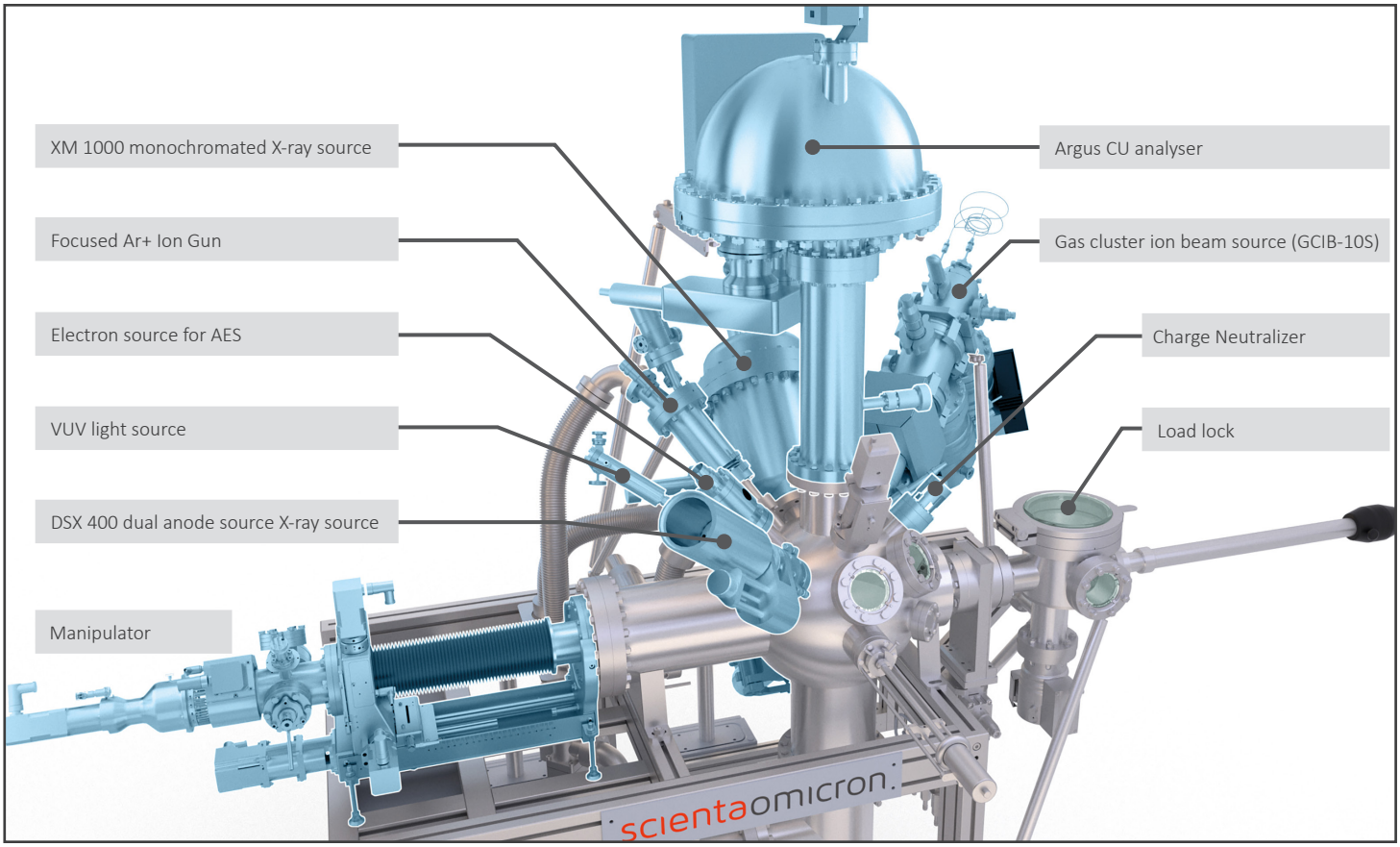
This exceptionally versatile specimen handling system allows not only the automated sequential measurement of multiple samples and positions, but also enables the application of specialized sample holders, like the powder sample holder and the atmosphere container for air-sensitive specimen.
The integrated calibration block simplifies periodic routine measurements to ensure the reliability of the acquired data.

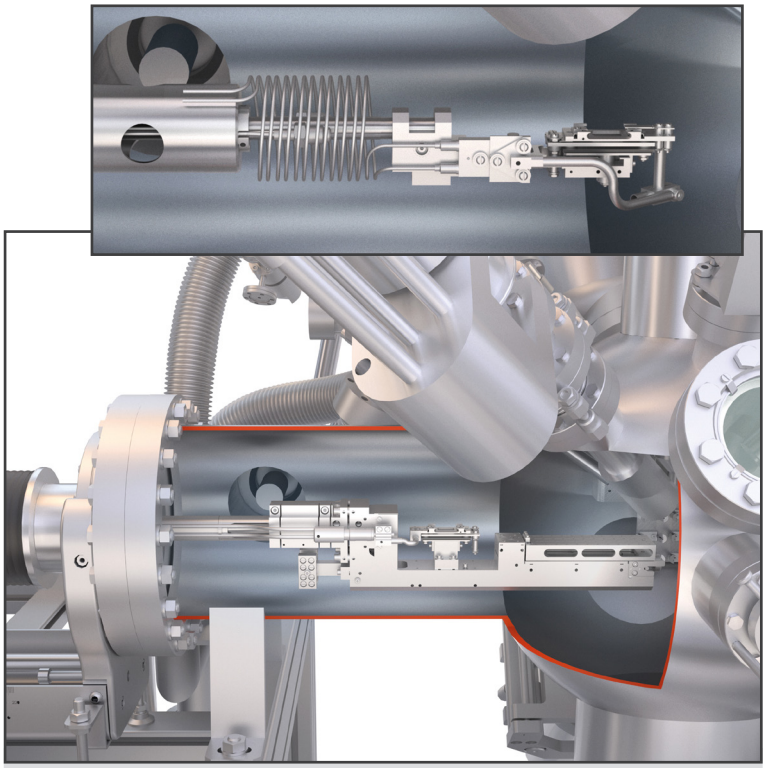


Advanced in-situ photoelectron experiments are enabled by virtually live snapshot data acquisition and extended sample manipulation possibilities, e.g. a wide temperature range (130 < T < 1100 K).

The XPS-Lab at a glance:

- Outstanding quantitative XPS performance
- Compact footprint with excellent accessibility
- User friendly experiment control and data acquisition software
- Versatilely configurable to meet individual demand
- Subsystem for Materials Innovation Platform MIP





Cross-sectional view of the XPS-Lab illustrating two sample handling concepts.
The Large Sample Carrier allows for mounting multiple samples and offers great flexibility for size and shape of sample specimen.
The flag style small sample stage (inset) offers unlimited compatibility with the full Scienta Omicron product range.

Technical Data

System Details

Base pressure:	< $2x10^{-10}$ mbar*
Chamber materials:	Non-magnetic steel or mu-metal
Sample handling options:	Flag type sample plates or Large Sample Carrier or Wafer up to 4" diameter

Features

- 128 data channel detection
- Large area XPS
- Selected area XPS
- Angle resolved XPS
- Snapshot XPS
- Electron source for AES**
- Sample biasing
- Sample heating **
- Sample cooling **
- Compucentric Zalar rotation***
- Monochromated Al Kα**
- Charge neutralization**
- Imaging XPS**
- Sputter depth profiling**
- Gas cluster ion beam sputtering**
- VUV light source for UPS**

* Specification for pump configuration consisting of Turbomolecular pump, Ion getter pump and Titanium sublimation pump.
** Optionally available.
*** Optionally available. Requires Large Sample Carrier upgrade.

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