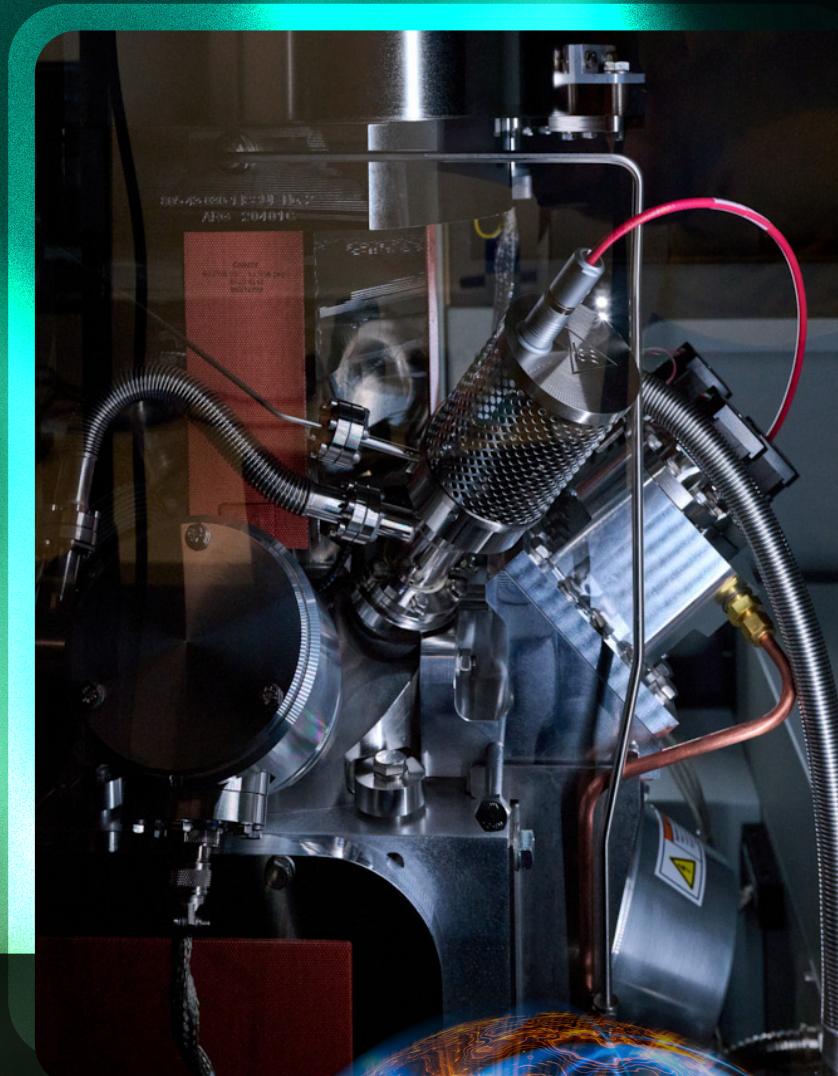


# X-ray Photoelectron Spectroscopy

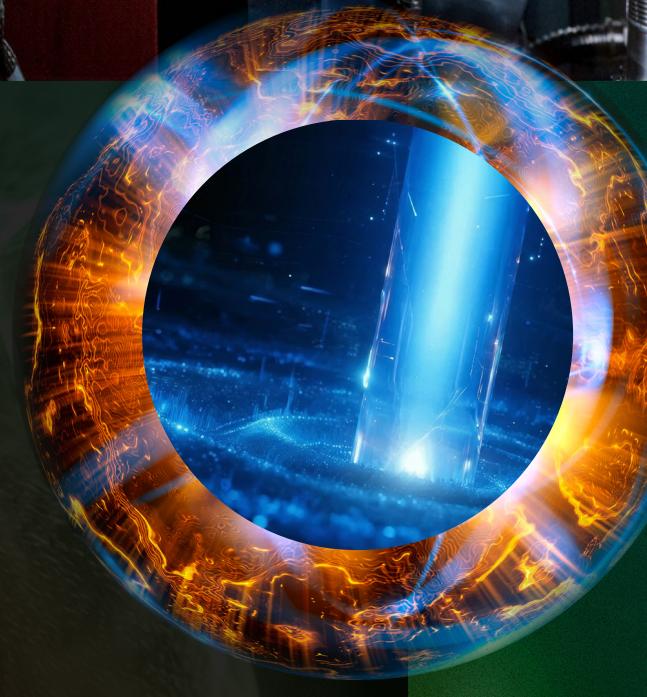
X-ray Photoelectron Spectroscopy (XPS) is a non-destructive analytical technique used to determine the elemental composition and chemical states of material surfaces. By probing only the topmost atomic layers, XPS provides highly surface-sensitive information, enabling the accurate quantification of surface chemistry and a detailed analysis of chemical bonding environments. This makes the technique indispensable for advanced materials research and surface characterization.

Our laboratory is equipped with a Thermo Scientific Nexsa G2 XPS system, featuring a monochromated, micro-focused Al Ka X-ray source (1486.6 eV). The instrument supports ion-beam etching for depth profiling and UPS measurements. It offers an adjustable X-ray spot size ranging from 10 to 400  $\mu\text{m}$ , enabling the analysis of both small, localized features and larger heterogeneous areas. The system accommodates samples up to 20 mm in thickness.



## Key Features

- Automated multi-technique XPS platform**  
Fully automated system integrating vacuum control, acquisition, and data processing for streamlined surface analysis.
- Monochromated micro-focused Al Ka source**  
High-stability X-ray source with adjustable spot size from 10 to 400  $\mu\text{m}$  for precise analysis of small or heterogeneous areas.
- High-resolution hemispherical analyzer**  
180° analyzer providing excellent energy resolution (<0.50 eV) for reliable chemical state identification.
- Integrated ion source for depth profiling**  
Ion gun enabling controlled sputtering and depth-resolved chemical analysis.



Contact  
**Zdeněk Badura, Ph.D.**  
**(zdenek.badura@vsb.cz )**

mei.vsb.cz

