



Research division: Environmental Nanogroup

The surface chemical analysis by X-ray photoelectron spectroscopy offer

We are offering commercial measurements of the surface chemical compositions by X-ray photoelectron spectroscopy (XPS) PHI 5000 VersaProbe II („XPS scanning microprobe“). XPS is an advanced technique applied for solid state surface chemical composition analysis (so-called ESCA – electron spectroscopy for chemical analysis) or for surface chemical composition analysis of frozen samples. This instrument allows angle resolved XPS, depth profiling and chemical state area mapping. This equipment is ideal for materials analysis especially for routine and complex analysis (qualitative and quantitative) and surface chemical states analysis of various conducting, non-conducting and magnetic samples. The XPS system is equipped by integrated flow through high pressure reactor (PREVAC, Poland). The navigation on the sample is provided by “ex-situ” camera picture or “in-situ” projection (secondary electrons).

XPS technical parameters:

- Monochromatic Al K_{α} X-ray source with the min. spot size of 9 nm
- Detector: 128 channels
- Energy resolution on Ag 3d_{5/2} peak: 0.5 eV
- Measurement temperature range: -150 °C up to 500 °C
- Analyzed area geometry: spots, lines, areas (mapping) with maximum size of 1000 μm x 1000 μm
- Five axis sample stage: axis X, Y, Z, tilt and rotation (compucentric Zalar)
- Dual beam charge compensation system: combination both a cold cathode electron flood source and the very low energy ion source
- Max. sample size: 60 mm in diameter with max. thickness of 8 mm or 25 mm in diameter with max. thickness of 13 mm
- Treatment of the samples in the flow through high pressure reactor: 25 °C up to 700 °C, gas pressure up to 20 bar, gases: N₂, Ar, O₂, CO, CO₂ and H₂
- Possibility of „parking“ up to 5 samples under the ultra-high vacuum conditions
- Possibility of sample transfer under vacuum or inert gas from another instrument or glove box
- Evaluation software: MultiPak, v. 9.5.0.8, CasaXPS.



**PHYSICAL
ELECTRONICS**
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