

# Time-of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS)



Leibniz Institute  
for high  
performance  
microelectronics

## Technical Parameters

**Time-of-flight mass spectrometer:**  
ION-TOF 5

**Primary Beam:**

**Analysis Gun:**

Liquid Metal Ion Gun (LMIG)  
Bi<sub>1</sub>, Bi<sub>3</sub> und Bi<sub>3</sub><sup>++</sup> Ions/Clusters  
**Sputter Gun:** O und Cs

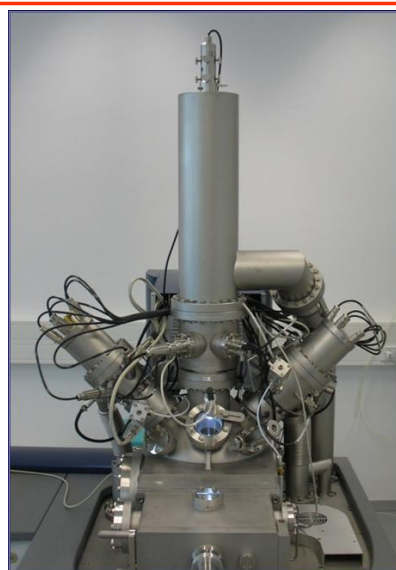
**Signal Detected:** Secondary Ions

**Elements Detected:** H – U

**Lateral Resolution:** 90 nm (Imaging)

**Depth Resolution:** 1 – 3 nm (Profiling)

**Detection Limits:** 10<sup>9</sup> - 10<sup>10</sup> at/cm<sup>2</sup> (sub-monolayer)



## Application areas

- Surface microanalysis of organic and inorganic materials
- High resolution ion imaging of surfaces
- Dopant and impurity depth profiling
- Composition and impurity measurements of thin films
- In situ sample cooling and heating (-130°C to +600°C)
- Sample (5 – 20mm) and wafer (200mm) analysis

## Contact person

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