

# Transmission Electron Microscopy (TEM)



Leibniz Institute  
for high  
performance  
microelectronics

## Technical Parameters

### **TEM System:**

FEI Tecnai Osiris

Super-X windowless silicon drift detector

**Primary Beam:** Electrons 200 keV

### **Signal Detected:**

- Transmitted electrons
- Scattered electrons
- X-rays

**Elements Detected:** B-U (EDX)

**Lateral Resolution:** TEM: 0.26 nm

STEM: 0.18 nm

EDX: 5 nm

**Detection Limits:** EDX: 0.1 - 1 at%

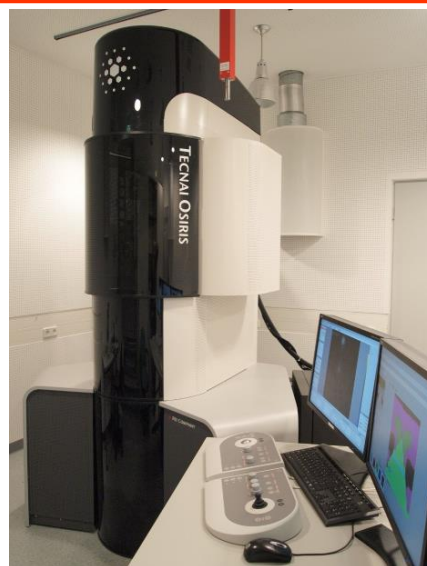
EELS: 1 at%

**EELS Energy Resolution:** 1.1 eV

**Goniometer:**  $\alpha$ : -35°- 35°

$\beta$ : -30°- 30°

**STEM:** BF, DF, HAADF Detectors



## Application areas

- Cross-section and plan-view (S)TEM analysis
- Failure analysis of integrated circuits
- Determination of crystallographic phases
- Crystal defect characterization
- Ultra small area elemental analysis by EDX and EELS

## Contact person

Dr. Ioan Costina

Phone: +49 335 5625 370

Fax: +49 335 5625 327

Email: [costina@ihp-microelectronics.com](mailto:costina@ihp-microelectronics.com)