

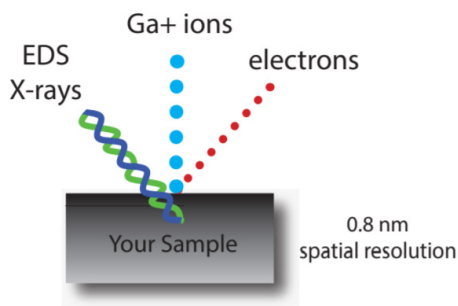
TECHNIQUE NOTE

FIB-SEM-EDS: 0.8 nm NanoScale Imaging with Elemental Analysis Tool

OVERVIEW

- Ions IN - Electrons OUT
- EDS Detection Limit: < 2 Atom %
- Smallest Analysis Area: 5-10 nm
- Depth Of Info: 1-10 nm, SEM
- Sample Size: 100 mm
- Prep STEM/TEM Lamella
- Cross-Section Defects

Dual-Beam FIB-SEM



STRENGTHS / ADVANTAGES

- 0.8 nm at 15 kV electrons
- 0.9 nm at 1 kV electrons
- 50 V - 30 kV landing voltage electrons
- 4.5 nm at 30 kV Ga ions
- 1.5 - 65 pA Ga ions
- 100 mm diameter x 8 mm in Z
- Excellent grain contrast imaging

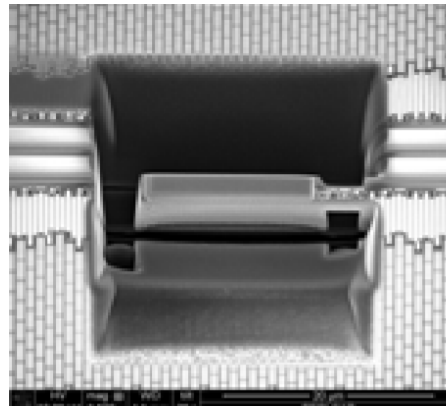
DATA PRODUCED

- Images - 0.8 nm spatial resolution
- EDS elemental composition
- Need special data - give us a call.

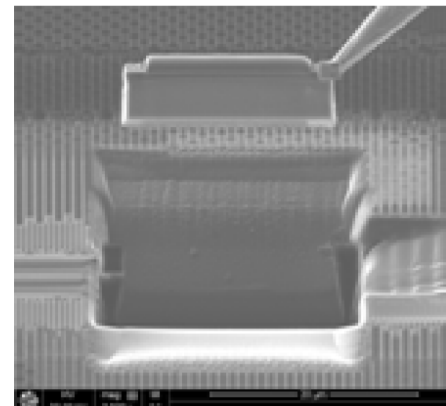
NanoLab's State-Of-The-Art 'FIB-SEM'



TEM Lamella Ready For Lift-Out



TEM Lamella Ready For Transfer



FIB-SEM-EDS: 0.8 nm NanoScale Imaging with Elemental Analysis Tool

GLOBAL USES

- Production control
- Materials development
- Quality control
- Problem solving
- Failure analysis
- Reverse engineering
- Data storage
- Optics

APPLICATIONS

- Semiconductors
- Optics
- Metallurgy
- 3D metrology
- Defect analysis
- TEM lamella prep
- Failure analysis
- Surface metrology
- Nano-metrology
- Prototyping MEMS & NEMS
- 2D porosity
- 3D permeability
- Polymers
- Many more - let's talk

SAMPLE TREATMENTS

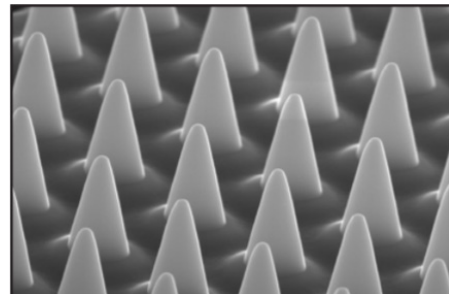
- Platinum stiping
- Gold coating - grounding
- Advanced treatments - let us help with your special needs.

ROUTINE USES

- STEM/TEM lamella prep
- Cross-section inspections
- Failure analysis
- Imaging
- Size analysis

ADVANCED USES

- Fresnel lenses
- MEMS
- EDS line profile for elements
- Specialty work? - Give us a call.



Through-Silicon-Vias (TSV)

