

# FAILURE ANALYSIS SERVICES

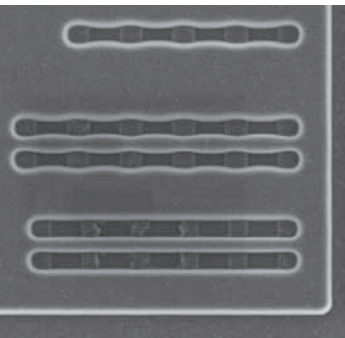
- COMPLETE ROOT CAUSE F/A FLOW
- FAST TURNAROUND TIMES
- NON-DESTRUCTIVE ANALYSIS
- SAMPLE PREPARATION
- FAILURE LOCALIZATION
- FIB / SEM / (S)TEM IMAGING

# FAILURE ANALYSIS SERVICES



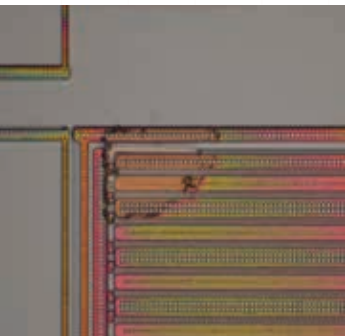
## NON DESTRUCTIVE ANALYSIS

- High magnification optical Microscopy
- DC parametric test (IV curve tracing)
- High Resolution 2D X-ray Microscopy
- CT X-ray Microscopy (3D X-ray)
- Scanning Acoustic Microscopy (SAM)
- (3D) Non-destructive Lock-In Thermography inspection (LIT)



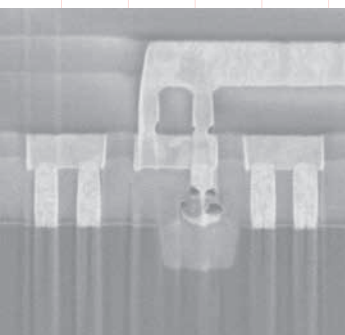
## SAMPLE PREPARATION

- Laser ablation decapsulation
- Wet chemical decapsulation / etching
- Microwave Induced Plasma decapsulation (MIP)
- Mechanical grinding/polishing/decapsulation
- Front side and back side delayering
- Automated selected area polishing (ASAP micro polishing)
- Dual-Beam cross-sectioning / TEM sample preparation



## FAILURE LOCALIZATION

- Photon Emission Microscopy (PEM / EMMI)
- Optical Beam Induced Resistance Change (OBIRCH)
- (3D) Lock-In Thermography (LIT)
- Conductive Atomic Force Microscopy (C-AFM)
- Passive Voltage Contrast Inspection (PVC)



## IMAGING

- Low power stereo Microscopy
- Bright Field / Dark Field high power optical Microscopy
- Through silicon Back Side NIR Laser Patterning (BSLP)
- High resolution Scanning Electron Microscopy (SEM)
- Focused Ion Beam imaging (FIB)
- (Scanning) Transmission Electron Microscopy ((S)TEM)