FAILURE LOCALIZATION SERVICES

- (3D) LOCK-IN THERMOGRAPHY (LIT)
- PHOTON EMISSION MICROSCOPY (PEM/EMMI)
- OPTICAL BEAM INDUCED RESISTANCE CHANGE (OBIRCH)
- SEM AND FIB VOLTAGE CONTRAST
- ATOMIC FORCE MICROSCOPY (AFM)
- BACK- AND FRONT SIDE ANALYSIS
FAILURE LOCALIZATION SERVICES

ADVANCED SAMPLE PREPARATION
• Front- and back side sample preparation
• Laser-, Mechanical-, Chemical- and Microwave Induced Plasma decapsulation
• Mechanical micro polishing of samples
• Wire bonding on package- and die level
• Die extraction for re-bonding
• Advanced electrical setup (multiple signals and IV)

(3D) LOCK-IN THERMOGRAPHY (LIT)
• Lock-In mode for >1µW spot detection
• Thermal mapping with an accuracy of 1 °C
• 3D LIT defect depth information (Z-axis)
• 200 mm thermal chuck for front- and back side analysis
• Non-destructive package level failure localization
• Capable of detecting low-Ohmic and resistive defects

PHOTON EMISSION/OBIRCH MICROSCOPY (EMMI/OBIRCH)
• Up to 6 probe needles for front-side/back-side connections
• Focused on the front-end of line (EMMI) and back-end of line (OBIRCH)
• OBIRCH Thermal laser stimulation of metal interconnections
• Seebeck Effect Imaging (SEI) for open connections
• The IC is in active electrical failing mode during the analysis
• Comparison between a failing and reference device

PASSIVE VOLTAGE CONTRAST / ATOMIC FORCE MICROSCOPY (AFM)
• Atomic Force Microscopy:
  • Conductive AFM (C-AFM)
  • 100 µm x 100 µm XY scan area, 0.05 nm resolution
  • I/V curve measurement
• Passive Voltage Contrast (PVC):
  • Detection of leakage at substrate level