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FAILURE LOCALIZATION SERVICE

- (3D) LOCK-IN THERMOGRAPHY (LIT)
- PHOTON EMISSION MICROSCOPY (PEM/EMMI)
- OPTICAL BEAM INDUCED RESISTANCE CHANGE (OBIRCH)
- SEM- AND FIB PASSIVE VOLTAGE CONTRAST (PVC)
- ATOMIC FORCE MICROSCOPY (AFM)
- FRONT- AND BACKSIDE ANALYSIS

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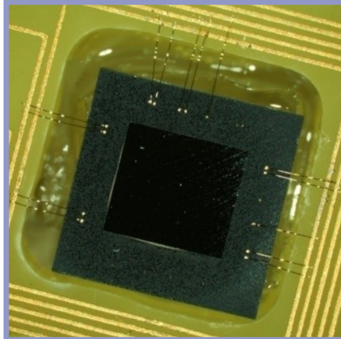
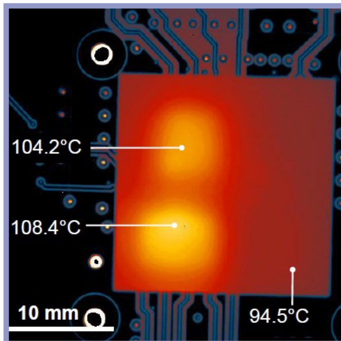
FAILURE LOCALIZATION SERVICE



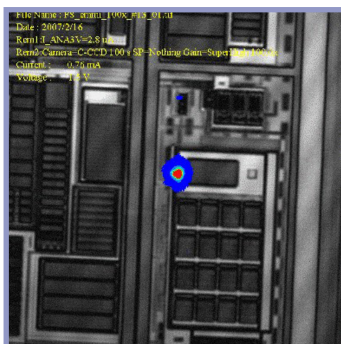
ADVANCED SAMPLE PREPARATION

- Front- and backside sample preparation
- Laser/mechanical/chemical/Microwave Induced Plasma (MIP) 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)



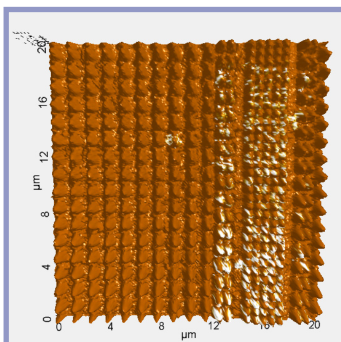
(3D) LOCK-IN THERMOGRAPHY (LIT)

- 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 and back side connections
- Focuses on the FEOL (EMMI) and BEOL (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 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

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