Analytical Imaging
Non-Destructive Imaging
Chemical Analysis
Electrical Analysis
Circuit Edit

MICROSCOPY & IMAGING
- 2-D X-ray Imaging - Real Time (RTX)
- 3-D X-ray Tomography
- Field Emission - Scanning Electron Microscopy (FE-SEM)
- Focused Ion Beam - Scanning Electron Microscopy (FIB-SEM)
- High Resolution Optical Microscopy
- Laser Confocal Microscopy
- Scanning Transmission Electron Microscopy (STEM)
- Transmission Electron Microscopy (TEM)
- Ultra High Resolution SEM (UHR-SEM)

ELECTRICAL FAILURE ANALYSIS (E-FA)
- Analytical Probe Station
- Curve-Trace - Manual & Automated
- Electrical Nanoprobing
- Emission Microscopy - Near Infrared (EMMI)
- Fluorescent Micro-thermal Imaging with Lock-in (FLMI)
- Laser Stimulation Microscopy - Near Infrared
- Scanning Optical Microscope (SOM) - Backside
- Thermal Imaging
- Time Domain Refectometry (TDR)

MATERIALS CHARACTERIZATION - CHEMICAL & PHYSICAL
- 2-D X-ray Imaging
- 3-D X-ray Tomography
- Analytical Transmission Electron Microscopy (AF-TEM)
- Dynamic SIMS
- Electron Energy Loss Spectrometry (EELS)
- Electron Spectroscopy for Chemical Analysis (ESCA)
- Energy Dispersive Spectroscopy (EDS, EDX)
- Field Emission - Scanning Electron Microscopy (FE-SEM)
- Focused Ion Beam - Scanning Electron Microscopy (FIB-SEM)
- High Resolution Digital Optical Microscopy
- Laser Confocal Microscopy - Near-Infrared (SOM)
- Scanning Transmission Electron Microscopy (STEM)
- Secondary Ion Mass Spectrometry (SIMS)
- Ultra High Resolution Sem (UHR-SEM)
- X-Ray Photoelectron Spectroscopy (XPS)

PHYSICAL FAILURE ANALYSIS (P-FA)
- 3-D X-ray Tomography
- Bond Pull, Die Shear and Ball Shear
- C-Scanning Acoustic Microscopy (C-SAM)
- De-Capsulation
- Deprocessing
- FIB - SEM Cross Sectioning
- Field Emission - Scanning Electron Microscopy (FE-SEM)
- Laser Decapping
- Profilometry
- Mechanical Cross-Sectioning
- Parallel Lapping
- Real Time 2-D X-ray Imaging (RTX)
- Scanning Acoustic Tomography (SAT)
- Wet Chemistry - Strong Acids, Bases

CIRCUIT EDIT
- Single Beam FIB (Back-Side and Top-Side)
- Single Beam FIB (Plasma Beam)
- Single Beam FIB (Top-Side with Gases)

BUNDLED SERVICES for FAILURE ANALYSIS
- LEVEL I
  Non-Destructive, Curve Trace, Failure Verification, External Inspection, Internal Optical Inspection, C-Scanning Acoustic Microscopy, 2-D Real Time X-ray, De-Cap, TDR
- LEVEL II
  LEVEL I Plus - Fault Isolation, Advanced Electrical Testing - Non-Destructive
- LEVEL III
  LEVEL I & II Plus - Deprocessing, Cross Sectioning, Advanced Microscopy, Materials Characterization

SAMPLE PREPARATION and ANALYSIS Per Request
- Argon Ion Milling
- Competitor Analysis
- Construction Analysis
- Counterfeit Analysis
- De-Capsulation (De - Cap)
- Diamond Milling - Backside / Frontside Sample Prep
- Dimpling
- Focused Ion Beam - Circuit Edit (FIB - Circuit Edit)
- Plasma Cleaning
- Preparation for TEM / STEM / FIB-SEM
- Reactive Ion Etching (RIE)
- Buelher Center of Excellence

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MANAGED SERVICES - NANOLAB PARTNERS
- Atomic Force Microscopy (AFM)
- Fourier Transform - Infrared Spectroscopy (FT-IR)
- Gas Chromatography - Mass Spectrometry (GC-MS)
- Glow Discharge - Optical Emission Spectrometry (GD-OES)
- Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES)
- Inductively Coupled Plasma - Mass Spectroscopy (ICP-MS)
- Laser Ablation - ICP-MS (LA-ICP-MS)
- Raman Spectroscopy
- X-ray Diffraction (XRD)
- X-ray Reflectometry (XRR)
- Wavelength Dispersive - X-ray Fluorescence (WD-XRF)

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Analytical Services
On Demand

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Work On-Site with us.
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