Providing technical and instrument support for materials, process and device characterization, and failure analysis

The Analytical and Diagnostics Laboratory (ADL) of the Small Scale Systems Integration and Packaging Center, a New York state Center of Excellence, is an interdisciplinary, multi-user research facility that promotes high-tech commercialization by providing instrument and technical support to academic and industry communities.

The ADL, a world-class research laboratory established in 2007 with a $21 million grant from New York state, is equipped with state-of-the-art, high-tech equipment to enable failure analysis, materials and device characterization, and processing.

The lab’s staff of PhD scientists and engineers provide equipment training, consultative assistance, operator services and research collaboration to our industry and academic partners.
ADL CAPABILITIES
• Ultra High Resolution Electron Microscopy and Microanalysis
• Thermal Analysis
• General Microscopy
• Non-destructive Evaluation
• Chemical Analysis
• Electrical and Mechanical Testing
• Materials Processing
• Surface and Interface Analysis
• Staffed Machine Shop for Fabricating Fixtures
• Extensive Sample Preparation Capabilities

ADL INSTRUMENTATION
• 2 HV and Variable Pressure SEMs with EDS, WDS, EBSD and e-beam lithography capabilities
• Dual Beam FIB/SEM with EDS and EBSD
• Field Emission TEM with STEM, EDS, EFTEM and EELS
• Optical Microscopes
• C-SAM and X-ray Imager with CT Scanner
• DSC, TGA, DMA, TMA, TGA-MS, Rheometer and Flash Diffusivity Thermal Analysis Tools
• IR Microscope
• XRD and SAXS
• FTIR Spectrometer and XPS with AES
• AFM, Stylus and Optical Profilers, Spectroscopic Ellipsometer
• 2 Ultrafast Laser Scanning Confocal Microscopes
• Laser Doppler Vibrometer, Particle Imaging Velocimeter
• EM Prep Tools: Dual Beam Ion Mill, Cross-section Polisher, Dimpler, Ultrasonic Core Drill, Sputter Coaters, Plasma Cleaner, etc.
• Extensive Metallography Tools
• Mesoscale Machine Shop

TECHNICAL AREAS SUPPORTED
• Microelectronics
• Flexible Electronics
• Nano-Technology
• Optoelectronics and Photonics
• Materials Research
• MEMS
• Sensors
• Biotechnology