

Facilities and Equipment

CASTLE is a state-of-the-art facility with the latest tools for structural integrity research.

- SGI® Altix® 4700 Supercomputer: 64 processor, 1/2 TB memory, 100 TB disk
- Electron Microscopy
 - FEI Helios NanoLaboratory Scanning Electron Microscope with FIB and WDS
 - JEOL Scanning Electron Microscopes JOEL
 - Hitachi Scanning Electron Microscope
 - EDS, Backscatter Detectors, and NORDLY EBSD Detector
- SkyScan Desktop Micro-CT Scan
- QuantoDesk Optical Emission Spectrometer
- MTS-SA2 Nano Indenter
- Nano-vibrating probe
 - Corrosion Potential Mapping Analysis
- NDI: C-scan, Eddy Current Surface Scan (ECSS), and Eddy Current Hole Probe (ECHP)
- 3 Stereo Optical Microscopes w/Digital Image Capture
 - Automated Image Analysis Equipment
 - Automated Metallography Equipment
- MTS Computer Controlled Mechanical Test Frames
 - 220 kip, 110 kip, 50 kip (2), 25 kip (2), 10 kip (2), Creep

- Thermo-Mechanical Chamber
- Environmental-Mechanical Chamber, Salt Fog Chamber
- Hardness Testers (3)
- Machining
 - CNC Mill (2), CNC Lathe (3), Digital Mill, Digital Lathe
 - CNC Wire EDM, CNC Die Sink EDM
 - CNC Laser Cutting and Etching
 - Flow Corporation Abrasive WaterJet Cutter
- 3-D Rapid Prototype Machine
- Composite filament winder, wet/dry composite lay-up
- High Temperature Furnace (4),

Additional non-AML Resources available to CASTLE on site

- Scanning tunneling electron microscope
- Atomic Force Microscope
- State-of-the-art Analytical Chemistry Laboratory
 - NMR
 - Spectroscopy
 - Chemical composition/identification equipment
- Additional computer-controlled load frames to 600 kip capacity
- 3 supercomputers
- 3 Wind tunnels