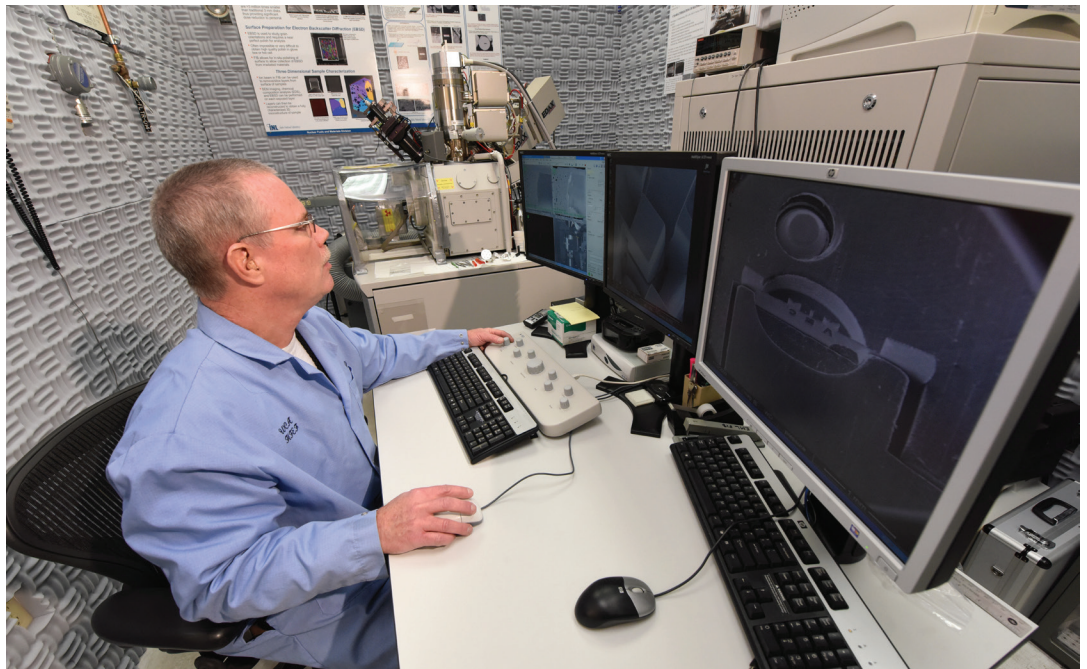


Electron Microscopy Laboratory

Post-irradiation Examination



Technical Information

The Electron Microscopy Laboratory (EML) is a user facility dedicated to materials characterization, using primarily electron and optical microscopy tools. Sample preparation capabilities for radioactive materials ensure that high-quality samples are available for characterization.

Basic Capabilities:

- Scanning electron microscopy (SEM) with microchemical analysis and grain-orientation imaging
- Dual-beam focused ion beam (FIB) with microchemical analysis and orientation imaging
- Transmission electron microscopy (TEM) with microchemical analysis
- Optical microscopy

- Microhardness testing
- Precision ion polishing and coating systems
- Sample preparation of irradiated metals, ceramics, and small quantities of irradiated fuel for examination in gloveboxes and chemical hoods

Key Instruments:

- FEI QUANTA 3G field emission gun (FEG) dual-beam focused ion beam with energy dispersive spectroscopy (EDS), wavelength dispersive spectroscopy (WDS), and electron backscatter diffraction (EBSD) detectors and omniprobe micromanipulator
- JEOL JSM-7000f SEM with EDS, WDS and EBSD detectors
- JEOL JEM 2010 scanning transmission electron micro-

scope with LaB6 electron gun and EDS

- Gatan precision ion polishing systems (PIPS-2)
- Gatan precision etching and coating system (PECS)

For more information

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