Sample Preparation Laboratory

Post-irradiation Examination

Technical Information

The Sample Preparation Laboratory (SPL) will, beginning in 2022, provide for the needs of a growing nuclear energy research community.

Basic Capabilities:

SPL will provide instrumentation and capability not currently available for analysis of irradiated materials, including many for understanding material-aging issues, improving materials for use in advanced nuclear energy systems.

- Load frame and charpy testing machines, each with an environmental chamber to simulate a wide range of environments from cryogenic to high temperature
- Micro- and nanohardness testers to determine material properties such as modulus of elasticity, hardness, yield strength, and fracture toughness in a very small area of sample
- Scanning electron microscopy for fracture surface analysis, a critical component of materials research
- Surface science instruments such as secondary ion mass spectrometry and X-ray photoelectron spectroscopy for chemical characterization of oxide films and fracture surfaces
- X-ray diffraction for determination of crystal structure of phases and the phase array in a material, residual stress measurement, and texture measurement to evaluate the evolution of these traits during irradiation

For more information

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