

Facility Expansion and Capability Growth in the Small-Scale Transuranic Lab within the Materials Characterization Center

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The Small-Scale Transuranic Lab within the Materials Characterization Center (MCC) has undergone a major expansion to better support actinide work for both National Ignition Facility (NIF) target fabrication and condensed matter physics (CMP) efforts. Previously limited to a single constrained workspace, the lab now spans three connected spaces, providing improved room for sample handling, equipment integration, storage, and overall workflow. The lab supports activities such as helium implantation chamber loading, DAC sample preparation, DCS work, and support for Z machine efforts, while also working in close coordination with the HiZ target fabrication group in the Superblock (SBK). Because this work is carried out in an actinide laboratory environment, even routine operations require specialized controls, radiological planning, and coordination across multiple groups.

This poster provides an overview of the motivation for the expansion and the capabilities the upgraded laboratory is intended to support. The increased footprint improves staging and working space for complex laboratory activities and creates room for future capability growth, including additional gloveboxes and new characterization tools. As part of the Small-Scale Transuranic Lab within the Materials Characterization Center, the expanded laboratory represents an infrastructure investment intended to improve current operations and increase long-term flexibility for actinide-related fabrication, preparation, and characterization work.

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