

## Recent Advances in Transcurium Actinide Target Production at Oak Ridge National Laboratory

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Oak Ridge National Laboratory (ORNL) has been involved for many years in the production of actinide targets for numerous applications, such as the continued study and discovery of super-heavy elements (SHE). Researchers at the ORNL Radiochemical Engineering Development Center (REDC) are currently producing targets with Cf material enriched in Cf-251. The targets will be irradiated with a Ca-48 beam on the U-400M heavy ion cyclotron at the Joint Institute for Nuclear Research (JINR) in Dubna, Russia. One of the main goals for the experiments is to synthesize new isotopes of the heaviest element known, Oganesson. Enriched Cf-251 material was previously recovered and purified at REDC from decayed Cf-252 sources, electrodeposited onto Ti foil, and irradiated at JINR. These target segments developed a film during irradiation and were returned to ORNL. Analysis of the film showed that it contains a silicon-based material. The mixed Cf material was recovered and purified in preparation for electrodeposition using a non-silicon containing target segment design. Recent results related to the production of the improved target segments will be discussed.

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