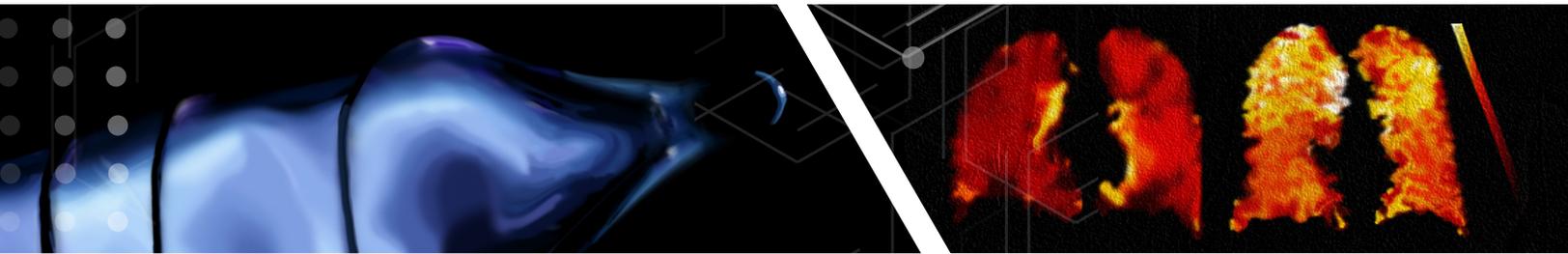


Stable Isotope Production Facility



In 2018, the Department of Energy (DOE) committed to building the Stable Isotope Production Facility (SIPF) to produce stable isotopes that are in short supply and cannot be enriched with current domestic capabilities. These isotopes will benefit medicine, industrial manufacturing, nuclear and physical science research, and homeland security.

Completed in 2025, the \$27 million facility on the Oak Ridge National Laboratory campus has state-of-the-art systems to protect the technology and materials produced there. SIPF will establish a domestic full-production cascade for enriched stable isotopes. Stable isotopes produced at SIPF will fill government research and other domestic needs not met by commercial suppliers. SIPF will reduce the nation's reliance on foreign sources for enriched stable isotopes by facilitating new capabilities to produce useful quantities of priority stable isotopes. This will help fill the void left when operation of the Oak Ridge calutrons ceased in 1998.

Details



Centrifuge cascade system and associated infrastructure



Optimized gas centrifuge isotope separator (GCIS) machine to produce Xe-129



GCIS machines in SIPF production cascade



Mechanically tested cascade and centrifuges as a complete system

Facilitating Lung Imaging

SIPF will produce Xe-129. This isotope can provide increased resolution and sensitivity in lung imaging without ionizing radiation, so it can be used for repeated imaging throughout the course of treatment. It is produced with gas centrifuge isotope separation (GCIS) equipment and feed-and-withdrawal systems in a cascade that ultimately can generate a set amount of highly enriched Xe-129 annually.



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