



Contribution ID: 1470 Contribution code: TUPB048

Type: **Poster Presentation**

Installation, operation, and upgrade of a CS-30 cyclotron for the production of alpha emitters At-211 and Ac-225 at the Ionetix TAT facility

Tuesday 3 June 2025 16:00 (2 hours)

Ionetix Corporation has been conducting research and development on compact superconducting cyclotrons for medical isotope production, with multiple Ion-12SC units installed and operated at customer sites in USA. Since 2021, we have also focused on the production of alpha-emitting medical isotopes for cancer therapy, specifically At-211 and Ac-225. As a first step, Ionetix acquired an existing, partial CS-30 Cyclotron system decommissioned and stored in a warehouse. We refurbished and upgraded the CS-30 cyclotron, replacing components as needed. The installation of the CS-30 was completed in 2022, and it has been operational, accelerating alpha and proton beams since 2023. The refurbished cyclotron features new main and trim coils, a new internal bismuth target and drive, and a new central region to enhance the beam-on-target performance. All power supplies, controls, and instrumentation were replaced with commercially available components. The first production of At-211 at Ionetix was achieved in April 2023, followed by the first production of Ac-225 in June 2024. This paper analyzes and describes the CS-30 cyclotron, and the upgrades and enhancements developed at Ionetix.

Footnotes

Paper preparation format

Word

Region represented

America

Funding Agency

Author: WU, Xiaoyu (Ionetix Corporation)

Co-authors: MCLEAN, Brandon (Ionetix Corporation); BLOSSER, Gabe (Ionetix Corporation); HORNER, Gary (Ionetix Corporation); VINCENT, John (Ionetix Corporation); USHER, Nathan (Ionetix Corporation); HART, Rick (Ionetix Corporation); VOROZHTSOV, Sergey (Joint Institute for Nuclear Research); SMIRNOV, Victor (Joint Institute for Nuclear Research); NEVILLE, Zachary (Ionetix Corporation)

Presenter: WU, Xiaoyu (Ionetix Corporation)

Session Classification: Tuesday Poster Session

Track Classification: MC8: Applications of Accelerators, and Engagement for Industry and Society:
MC8.U04 Isotope Production