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Production of ^{100}Mo for Cyclotron Conversion to ^{99m}Tc

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ABSTRACT

The new cyclotron production route to manufacture ^{99m}Tc for medical imaging has made substantial progress over the past few years. Its commercial viability has now been proven and is based on a full capital cost payback, requiring no subsidy, with a much lower environmental and political profile than reactor-based ^{99m}Tc manufacturing.

^{100}Mo-isotope enriched material is vital to the cyclotron method. This enrichment can be performed at relatively low capital and operating costs using ASP technology.

ASP technology is an aerodynamic process that is a lesser-known embodiment of the principles of centrifugal separation labelled as a stationary wall centrifuge - no moving parts. It extends the stationary wall centrifuge idea which resides in the public domain, by utilising novel extensions to achieve successful isotope separation.

The much lower cost of production of enriched ^{100}Mo via ASP augments a low cost of ^{99m}Tc production along the cyclotron route that is also green.