

Direct Injection of Radioactive¹⁺ Ions into an ECRIS via a Sextupole Ion-Guide

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Singly-charged, radioactive ions produced in an Ion Guide Isotope Separation On-Line (IGISOL) target cell with an incident high-energy proton beam have been injected via a 2.4 meter long sextupole-ion guide (SPIG) into an ECR ion source (CB-ECRIS) and charge-bred. The SPIG has five sections divided by apertures which allow the large flow of helium from IGISOL to be pumped away before the CB-ECRIS. A good charge-breeding efficiency was obtained with this set-up, allowing for acceleration of radioactive products by the K500 cyclotron. However, at present the SPIG is difficult to align and service, so a more flexible design with diagnostic capability is being considered.