

Abstract Submitted
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Transport of ions using RF Carpets in Helium Gas KEENAN LAMBERT, Student, JAMES KELLY, Grad student, MAXIME BRODEUR, Doctor — Radio-Frequency (RF) carpet are critical components of large volume gas cells used to thermalize radioactive ion beams produced at in-flight facilities. RF carpets are formed by a series of co-centric conductive rings on which an alternating potential (in the radio-frequency range) is applied with opposite polarity on adjacent rings. This results in a strong repelling force that keep the ions a certain distance from the carpet. The transport of ions using RF carpet is accomplished using either a potential gradient applied on the individual all strips or traveling wave (using the so-called ion surfing method). A test setup has been constructed at the University of Notre Dame to perform studies on the repelling of ions using RF carpets. This test setup has recently been improved by the addition of circuitry elements allowing the transport of ions using the ion surfing method. The developed circuitry, together with transport results for various ion beam currents, electric force applied on the ions, and traveling wave amplitude and speed will be presented

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