

Abstract Submitted
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Performance of the Linear Gas Cell at the NSCL¹ KORTNEY COOPER, DAVID MORRISSEY, RYAN RINGLE, STEFAN SCHWARZ, CHANDANA SUMITHRARACHCHI, NSCL/MSU, GUY SAVARD, ANL — Beam thermalization allows projectile fragmentation facilities to produce low-energy ion beams. The beam thermalization technique employed by the National Superconducting Cyclotron Laboratory (NSCL) involves high-energy ion beams first passing through solid degraders to remove the bulk of the beam's kinetic energy. The remaining kinetic energy is then dissipated through collisions with the buffer gas atoms of a linear gas cell constructed by Argonne National Lab (ANL). Numerous experiments have been performed for the commissioning and online operation of the gas cell. These experiments used incident ions that ranged from ^{29}Mg , ^{29}P , ^{33}Cl , ^{37}K , ^{40}S , ^{46}Ar , to ^{76}Ga at incoming rates ranging from 10^2 pps to 10^7 pps. The extraction efficiency as well as the overall efficiency of the system has been analyzed for each experiment. LISE++, particle-in-cell (PIC), and SIMION simulations have been carried out for the data obtained with ^{76}Ga ions. Both the experimental and simulated results for the gas cell's performance will be presented and discussed.

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