

Abstract Submitted
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Helium Targets for Low-Energy Deuteron Bombardment¹ ALEXA LAPIERRE, LAURA HUFF, KRISTEN ZARCONI, STEPHEN PADALINO, SUNY Geneseo — The ${}^3\text{He}(\text{d,p})\alpha$ reaction can produce protons with energies in excess of 20 MeV at deuteron bombarding energies of 3 MeV. This makes it a useful accelerator-based reaction for calibrating CR-39 plastic detectors with high energy protons. Helium targets are most frequently made via ion implantation. This approach confines the Helium in the inner atomic structure of a thin Palladium getter. The getter is produced by evaporating Pd at 2963 °C on a glass slide treated in a releasing agent and carbon substrate. The 4 μm thickness film is then placed in a pure Helium environment and heated to 300 °C for 4 hours. The targets were bombarded with 3 MeV protons generated by SUNY Geneseo's 1.7 MV Pelletron Accelerator. Analysis of the elastically scattered Helium ion was used to determine the concentration of Helium as a function of the beam heating and vacuum chamber evaporation.

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Laura Huff
SUNY Geneseo

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