

## Tests of a cryogenic gas cell for radioactive ion beam experiments

K. Chipps<sup>1</sup>, D. Bardayan<sup>2</sup>, J. Blackmon<sup>2</sup>, K. Chae<sup>3</sup>, J. Eastburg<sup>1</sup>, U. Greife<sup>1</sup>, K.L. Jones<sup>3</sup>, R. Kozub<sup>4</sup>, R. Livesay<sup>1</sup>, B. Moazen<sup>3</sup>, C.D. Nesaraja<sup>2</sup>, S. Pain<sup>5</sup>, M. Porter-Peden<sup>1</sup>, F. Sarazin<sup>1</sup>, M.S. Smith<sup>2</sup>  
(<sup>1</sup>Colorado School of Mines <sup>2</sup>ORNL <sup>3</sup>UT Knoxville <sup>4</sup>Tennessee Tech <sup>5</sup>Rutgers)

The properties of resonances that dominate thermonuclear reaction rates on proton-rich, unstable nuclei can be probed using transfer reactions like (<sup>3</sup>He,p). In inverse kinematics, this is achieved with a radioactive ion beam and a <sup>3</sup>He gas target. A cryogenic gas cell target for such experiments has been constructed at the Colorado School of Mines and tested at Oak Ridge National Laboratory with a stable <sup>17</sup>O beam. The gas cell design has been modified several times, and a number of techniques are being explored to reduce the significant yield from background reactions with the window material. Alternatively, a gas jet target with recycling capability could be a better solution to the long-term problem of using rare gases as targets. Results from our beam tests and future plans will be presented.

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