

Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

First Direct Measurement of the $^{17}\text{F}(p, \gamma)^{18}\text{Ne}$ Cross Section¹ K.A. CHIPPS, U. GREIFE, Colorado School of Mines, D.W. BARDAYAN, C.D. NESARAJA, S.D. PAIN, M.S. SMITH, Oak Ridge National Laboratory, J.C. BLACKMON, Louisiana State University, K.Y. CHAE, B.H. MOAZEN, S.T. PITTMAN, University of Tennessee Knoxville, R. HATARIK, W.A. PETERS, Rutgers University, R.L. KOZUB, J.F. SHRINER, Tennessee Technological University, C. MATEI, Oak Ridge Associated Universities — The rate of the $^{17}\text{F}(p, \gamma)^{18}\text{Ne}$ reaction is of significant importance in astrophysical events like novae and x-ray bursts. A 3^+ state in ^{18}Ne predicted to dominate the rate was found at 599.8 keV using the $^{17}\text{F}(p, p)^{17}\text{F}$ reaction [1], but the resonance strength was unknown. For the first time, the $^{17}\text{F}(p, \gamma)^{18}\text{Ne}$ reaction has been measured directly with the Daresbury Recoil Separator, using a mixed beam of radioactive ^{17}F and stable ^{17}O from the HRIBF at ORNL. Resonant proton capture cross sections, γ widths, and resonance strengths for the 599.8 keV and 1178 keV resonances will be reported, as well as an upper limit on the direct capture cross section at an intermediate energy. [1] Bardayan et al., Phys. Rev. C **62** 055804 (2000)

¹This work is supported by the US DOE.

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Date submitted: 23 Jun 2008

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