

Abstract Submitted
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Measuring fusion of $^{41,45}\text{K}$ and $^{36,44}\text{Ar}$ ions with ^{28}Si target nuclei at near barrier energies¹ J.E. JOHNSTONE, JUSTIN VADAS, JACOB HUSTON, AUBREY WHITEMAN, AMRIT PARIHAR, TYLER WERKE, SYLVIE HUDAN, R.T. DESOUZA, Indiana Univ - Bloomington — Recent measurement of fusion in $^{39,47}\text{K} + ^{28}\text{Si}$ has demonstrated the feasibility of investigating near barrier fusion with low-intensity ($\approx 10^4$ ions/s), reaccelerated, radioactive beams. Such experiments for an isotopic chain allow exploration of the dependence of fusion on neutron number to the limits of stability. To expand the study beyond the closed N=20 and N=28 shells, as well as explore the role of the unpaired proton, an experiment to measure fusion in $^{41,45}\text{K} + ^{28}\text{Si}$ and $^{36,44}\text{Ar} + ^{28}\text{Si}$, 17002, has been approved at NSCL's ReA3 facility. Fusion products will be identified by measuring their Energy and Time-of-flight. The experimental setup, improvements since the previous experiment, and the setup's efficiency, estimated using the statistical decay code evapOR, will be presented. Calculations of the fusion excitation function using the coupled channels model CCFULL will also be shown.

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