Abstract Submitted
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Measurements of the ^{124}Sn(γ,n) and ^{169}Tm(γ,n) cross sections at E_γ = 13 MeV[1] KAYLISA WOLSEY, Brigham Young University - Idaho, SEAN FINCH, F. KRISHICHAYAN, Duke University and TUNL, JACK SILANO, Lawrence Livermore National Laboratory, WERNER TORNOW, Duke University and TUNL, ANTON TONCHEV, Lawrence Livermore National Laboratory, INNOCENT TXORSE, Duke University and TUNL — Nuclear data for photo-nuclear reactions is scarce. By using the activation technique, (γ,n) cross sections can be measured to a high precision. ^{169}Tm(n,2n) is a common neutron monitor reaction, but there is no available data on its photo-nuclear counterpart, the ^{169}(γ,n) reaction. Measurement of this reaction would allow use of thulium as a standard γ-ray monitor. The samples in this experiment were irradiated by monoenergetic γ-rays provided by the High Intensity γ-ray Source (HIγS) located at Duke University. The resultant activity was quantified using γ-ray spectroscopy with high purity germanium detectors. The data confirmed the literature half-lives of ^{196}Au, ^{123m}Sn, and ^{169}Tm as 6.16 d, 40.1 m, and 93.1 d, respectively. The first successful cross-section measurements of ^{124}Sn(γ,n)^{123m}Sn and ^{169}Tm(γ,n)^{168}Tm reactions were performed.

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