Abstract Submitted
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Nuclear Resonance Fluorescence from Uranium above 2 MeV[1] E. KWAN, C.R. HOWELL, R. RAUT, G. RUSEV, A.P. TONCHEV, W. TORNOW, Duke, A. ADEKOLA, S.L. HAMMOND, H.J. KARWOWSKI, J.R. TOMPKINS, UNC-Chapel Hill, C. HUIBREGTSE, J.H. KELLEY, NCSU, B. JOHNSON, NCA&T — The detection of special nuclear materials is critical to the nation's efforts to counter serious threat from nuclear terrorist attacks. A research program has been initiated at TUNL to address the need for new nuclear data on the actinides using the High-Intensity Gamma-Ray Source (HIγS). The high-intensity nearly monoenergic and 100% polarized γ-ray beams from HγS were utilized to search for dipole states in ^{235}U and ^{238}U above 2 MeV. This information is necessary for developing technologies using Nuclear-Resonance Fluorescence (NRF) to nonintrusively scan cargo for specific nuclei. The existence of strong nuclear dipole transitions in the actinides above 2 MeV is important for nuclear forensics, because interrogation photons using NRF are the most penetrating at these energies. Results from our experiments at $E_\gamma > 2.0$ MeV on uranium will be presented.

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