Abstract Submitted
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The Astrophysical ^{187}Re^{187}Os Ratio: Measurement of the ^{187}Re(n, 2n γ)^{186m}Re Destruction Cross Section[1] J.H. KELLEY, NC State U and Triangle Universities Nuclear Laboratory, D.B. MASTERS, Samford U, S. HAMMOND, H.J. KARWOWSKI, UNC-Chapel Hill and TUNL, E. KWAN, A. HUTCHESON, A.P. TONCHEV, W. TORNOW, Duke U and TUNL, F.G. KONDEV, S. ZHU, Argonne National Laboratory — We have initiated a program to measure neutron-induced cross sections on ^{187}Re using monoenergetic neutron beams and an array of HPGe γ-ray detectors at TUNL. Our emphasis is on measuring transitions in the ^{187}Re(n, 2n) reaction that populate the long-lived isomeric state, ^{186m}Re. These data are needed to decrease uncertainties in the ^{187}Re/^{187}Os cosmochronometer, which dates the *r*-process nucleosynthesis. Results from a first run using a pulsed 12 MeV neutron beam will be presented, and an overview of planned measurements that will measure the excitation function making use of both prompt γ-ray detection and activation techniques will be given.

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