Measurements of the Radio-production Cross Section of ^{193}Ir$(n, n')^{193m}$Ir between 0.5 and 9 MeV

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Iridium has historically served as a useful neutron fluence monitor due to its ability to probe the thermal, fission, and fusion energy regimes through (n, γ), (n, n'), and $(n, 2n)$ reactions. ^{193}Ir has a J^{π}=11/2- metastable state ($t_{1/2}$=10.5 days) that can be induced from (n, n') reactions and emits a 9.18 keV x-ray via internal conversion. The effectiveness of iridium as a neutron fluence monitor is dependent on the accuracy the (n, n') cross section. Recent measurements of the ^{193}Ir$(n, n')^{193m}$Ir radio-production cross section indicate a discrepancy between ENDF, model predictions, and previous measurements. Further measurements are needed to address this discrepancy. An experiment to measure the ^{193m}Ir radio-production cross section was conducted at the University of Notre Dame St.ANA 5U accelerator laboratory. Neutrons from ^{7}Li$(p, n)^{7}$Be and ^{13}C$(\alpha, n)^{16}$O was used to bombard iridium foils from 0.5-9 MeV. Measurements were normalized to Gold, Nickel, Iron, and Indium reference foils. Results from this measurement will be presented.