

Abstract Submitted
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Measurement of the Ir-191,193(n,2n)Ir-190,192 Reaction Cross Section Between 9.0 and 16.5 MeV¹ ELIZABETH WILDENHAIN, University of Notre Dame, SEAN FINCH, WERNER TORNOW, F KRISHICHAYAN, TUNL — Iridium is one of the elements prioritized by Nonproliferation and Homeland Security agencies. In addition, Ir-192 is being used in various medical treatments. Improved data and corresponding evaluations of neutron-induced reactions on the iridium isotopes are required to meet the demands of several applications of societal interest. This study measured the cross section of the Ir-191,193(n, 2n)Ir-190,192 reactions at energies from 9.0 to 16.5 MeV using the activation technique. Natural Ir samples [Ir-191 37.3%, Ir-193 62.7%] were sandwiched between Au-197 monitor foils and irradiated with monoenergetic neutron beams at the tandem facility of the Triangle Universities Nuclear Laboratory (TUNL). Gamma rays from the irradiated samples were counted in TUNL's low background facility using high-efficient HPGe detectors. Measured cross-section data are compared to previous data and to predictions from nuclear data libraries (e.g. ENDF).

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