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Isospin Dependence of Quasifission KALEE HAMMERTON, ZACHARY KOHLEY, KRYSTIN STIEFEL, National Superconducting Cyclotron Laboratory, DAVID HINDE, IAN CARTER, KAITLIN COOK, MAHANANDA DASGUPTA, DONGYUN JEUNG, DUC HUY LUONG, STEVEN MCKEIL, CHANDANI PALSHETKAR, DOMINIC RAFFERTY, CEDRIC SIMENEL, ADITYA WAKHLE, ELIZABETH WILLIAMS, The Australian National University — Past successes in the formation of superheavy elements have been the result of fusion reactions. These reactions, however, are hindered by orders of magnitude by quasifission. The probability for quasifission to occur depends on many reaction conditions, including isospin. Previous attempts to understand the isospin dependence have resulted in conflicting conclusions. The prevalence of the quasifission reaction channel was systematically investigated through a series of reactions of Cr beams with W targets at energies above the fusion barrier at the Australia National University. The mass angle distributions of the fission-like fragments, known to be extremely sensitive to the quasifission process, were measured. The mass widths could not be explained by theoretical fusion-fission mass widths alone. It is shown that quasifission is a prominent reaction channel in these reactions. The likelihood of the quasifission reaction channel decreased with increasing neutron richness of the compound nucleus. This result supports the use of radioactive beams in future superheavy element production reactions.

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