

Abstract Submitted
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A further measurement to test electron conversion theory: transitions produced following the β -decay of ^{116}In SONDRA MILLER¹, JOHN HARDY, NINEL NICA, JOHN GOODWIN, Texas A&M University, Cyclotron Institute — Precise internal conversion coefficients (ICCs) are vital to the study of nuclear decay schemes, determining transition rates, spin and parity designations, and branching ratios. However, there are very few experimental tests of the calculated ICC's and in fact there are only ~ 10 measurements available with errors of less than 1%. Such a paucity of data complicates scientists' efforts to determine what theoretical calculations should be used to model the ICC. The goal of our present experiment is to determine the α_k for the 65.7-keV M4 transition in ^{119}Sn . However, the energy of the ^{119}Sn x-rays is below the energy range that our HPGe detector is accurately calibrated for. The β -decay of ^{116}In populates states in ^{116}Sn which produce a few strong transitions with well established conversion coefficients. This allows us to calibrate our detector at the energy of the Sn x-rays, which is an essential requirement for the measurement of the ^{119}Sn ICC.

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