^{155}Ta

Page et al. announced the discovery of ^{155}Ta in the 2007 paper "α decay of ^{159}Re and proton emission from ^{155}Ta" (2007Pa27). Isotopically enriched ^{106}Cd was bombarded with a 300 MeV ^{58}Ni beam at the Jyväskylä accelerator laboratory forming ^{159}Re in the (p4n) fusion-evaporation reaction. ^{155}Ta was observed following the α-decay of ^{159}Re with the RITU gas-filled separator and the GREAT spectrometer. "This α decay populates a state in the closed neutron shell nucleus ^{155}Ta, which decays by emitting 1444$\pm$15 keV protons with a half-life of $2.9^{+1.5}_{-1.1}$ ms. These values are consistent with the emission of the proton for a $\pi h_{11/2}$ orbital. These results fit in with the systematics of proton and α-particle separation energies in the region, but disagree with the previously reported decay properties of ^{155}Ta." The disagreement mentioned in the quote refers to a previous measurement of E_p = 1765(10) keV and $T_{1/2} = 12^{+4}_{-3}\mu$s (1999Uu01) which was incorrect.

Adapted from reference (2012Ro36)

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