^{177}Tl

Poli et al. reported the first observation of ^{177}Tl in the 1999 paper "Proton and α radioactivity below the Z = 82 shell closure" (1999Po09). A 370 MeV ^{78}Kr beam from the Argonne ATLAS accelerator facility bombarded an enriched ^{102}Pd target and ^{177}Tl was produced in the (1p2n) fusion-evaporation reaction. Reactions were separated with the Argonne Fragment Mass Analyzer (FMA) and implanted in a double-sided silicon strip detector which also detected subsequent proton and α decay. "[The figure] shows a composite spectrum of weaker proton and alpha-decay groups [E_p = 1156(20) keV and E_α = 6907(7) keV] assigned to the ground-state decays of ^{177}Tl with branches b_p=0.27(13) and b_α=0.73(13), and a combined half-life value of 18(5) ms." Poli et al. also measured the half-life of an isomeric state (230(40) μs). A previous search for ^{177}Tl was not successful (1991Se01).

Adapted from reference (2013Fr04)

1991Se01 P. J. Sellin, P. J. Woods, R. D. Page, S. J. Bennett *et al.*, Z. Phys. A **338**, 245 (1991).

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