^{159}Re

"Probing the limit of nuclear existence: Proton emission from ^{159}Re" reported the discovery of ^{159}Re in 2006 by Joss et al. (2006Jo10). An enriched ^{106}Cd target was bombarded with a 300 MeV ^{58}Ni beam at the Jyväskylä Accelerator Laboratory and ^{159}Re was produced in the fusion-evaporation reaction ^{106}Cd(^{58}Ni,p4n). Reaction products were identified using the RITU gas-filled separator and the GREAT focal-plane spectrometer. "The 1.8 MeV peak is assigned as the proton decay from the previously unknown nuclide ^{159}Re. This yield corresponds to one ^{159}Re nucleus in every 4 million evaporation residues implanted into GREAT. The few counts at higher energy represent real correlations with the 6600$\pm$3 keV α decay of ^{162}Os populated directly as an evaporation residue. The half-life of the ^{159}Re proton decay peak was measured as 21$\pm$4 μs using the maximum likelihood method."

Adapted from reference (2012Ro36)

2006Jo10 D. T. Joss, I. G. Darby, R. D. Page, J. Uusitalo *et al.*, Phys. Lett. B **641**, 34 (2006).

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