^{293}Ts

In the 2010 paper "Synthesis of a new element with atomic number Z = 117", Oganessian et al. reported the first observation of ^{293}Ts (2010Og01). A ^{249}Bk target was bombarded with 252 MeV and 247 MeV ^{48}Ca beam from the Dubna U400 cyclotron to form ^{293}Ts in (4n) evaporation reactions. The residues were separated with a gas-filled recoil separator and implanted in a semiconductor detector array. Subsequent α particle decay and spontaneous fission events were recorded in this array and in eight detectors arranged in a box configuration around the implantation detector. "The data are consistent with the observation of two isotopes of element 117, with atomic masses 293 and 294. These isotopes undergo α decay with E_α = 11.03(8) MeV and 10.81(10) MeV and half-lives 14(+11,−4) and 78(+370,−36) ms, respectively, giving rise to sequential α-decay chains ending in spontaneous fission of ^{281}Rg ($T_{SF} \sim$ 26 s) and ^{270}Db ($T_{SF} \sim$ 1 d), respectively." Five decay chains for ^{293}Ts was observed. Further experimental details were included in a subsequent publication (2011Og04).

Adapted from reference (2013Th02)

2010Og01 Yu. Ts. Oganessian, F. Sh. Abdullin, P. D. Bailey, D. E. Benker *et al.*, Phys. Rev. Lett. **104**, 142502 (2010).

2011Og04 Yu. Ts. Oganessian, F. Sh. Abdullin, P. D. Bailey, D. E. Benker *et al.*, Phys. Rev. C **83**, 054315 (2011).

2013Th02 M. Thoennessen, At. Data Nucl. Data Tables **99**, 312 (2013).

Please cite this abstract as: "FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:10.11578/frib/2279152"