^{203}Ac

In the 2024 paper "α-decay properties of new neutron-deficient isotope ^{203}Ac," Wang et al. reported the first observation of ^{203}Ac (2024Wa14). The superconducting linear accelerator at the China Accelerator Facility for superheavy Elements (CAFE2) in Lanzhou, China, was used to bombard a 500 μg/cm^2 thick ^{169}Tm target with a 226 MeV ^{40}Ca beam. ^{203}Ac was then produced in the ^{169}Tm(^{40}Ca,6n) fusion-evaporation reaction. Residues were separated with the gas-filled recoil separator Spectrometer for Heavy Atoms and Nuclear Structure-2 (SHANS2) and implanted in double-sided silicon strip detector. Subsequent α-particles were detected in these and six surrounding single silicon strip detectors. "One ER - α_1 - α_2 - α_3 - α_4 decay chain has been identified for ^{203}Ac. The α-particle energy and half-life were extracted to be 8217(16) keV and 56^{+269}_{-26} μs, respectively.

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