^{18}Mg

The discovery of ^{18}Mg was reported by Jin et al. in the 2021 paper "First Observation of the Four-Proton Unbound Nucleus ^{18}Mg" (2021Ji15). A secondary 103 MeV/nucleon ^{20}Mg beam was produced from a primary 170 MeV/nucleon ^{24}Mg beam at the Coupled Cyclotron Facility of the National Superconducting Cyclotron Laboratory at Michigan State University. After separation with the A1900 fragment separator the ^{20}Mg impinged on a 1-mm thick ^{9}Be target and produced ^{18}Mg in two-neutron knockout reactions which then decayed into ^{14}O and four protons. The ^{14}O was detected around zero degrees in an orthogonal array of scintillating fiber ribbons. Protons were recorded in an annular double-sided silicon-strip detector backed by an annular array of CsI(Tl) crystals. "We have observed, for the first time, ^{18}Mg via its decay into 4p + ^{14}O. The ground-state decay energy was found to be E_T = 4.865(34) MeV."

Adapted from reference (2023Th03)

2021Ji15 Y. Jin, C. Y. Niu, K. W. Brown, Z. H. Li *et al.*, Phys. Rev. Lett. **127**, 262502 (2021).

2023Th03 M. Thoennessen, Int. J. Mod. Phys. E **32**, 2330001 (2023).

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