^{38}Sc

The first observation of ^{38}Sc was described in 2024 by Dronchi et al. in "Evolution of shell gaps in the neutron-poor calcium region from invariant-mass spectroscopy of ^{37,38}Sc, ^{35}Ca, and ^{34}K" (2024Dr01). A 140 MeV/nucleon ^{40}Ca beam from the Coupled Cyclotron Facility of the National Superconducting Cyclotron Laboratory at Michigan State University was used to deliver a secondary 72 MeV/nucleon ^{37}Ca beam to a 0.5 mm thick Be target. ^{38}Sc isotopes were populated via one-proton pick-up reactions and identified by invariant mass spectroscopy by detecting ^{37}Ca fragments with a Scintillating-Fiber Array and the S800 spectrometer and protons in a ΔE-E Ring Telescope. "The data for the first observation of ^{38}Sc is presented in [the figure] where the decay-energy spectrum for p+^{37}Ca events is shown. The spectrum shows a resolved state (ground state) at E_T = 1.191(14) MeV."

2024Dr01 N. Dronchi, R. J. Charity, L. G. Sobotka, B. A. Brown *et al.*, Phys. Rev. C **110**, L031302 (2024).

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