

^{228}At

^{228}At were discovered by Alvarez-Pol and the results were published in the 2010 paper “Production of new neutron-rich isotopes of heavy elements in fragmentation reactions of ^{238}U projectiles at 1 A GeV” (2010A124). A beryllium target was bombarded with a 1 A GeV ^{238}U beam from the GSI SIS synchrotron. The isotopes were separated and identified with the high-resolving-power magnetic spectrometer FRS. “To search for new heavy neutron-rich nuclei, we tuned the FRS magnets for centering the nuclei ^{227}At , ^{229}At , ^{216}Pb , ^{219}Pb , and ^{210}Au along its central trajectory. Combining the signals recorded in these settings of the FRS and using the analysis technique previously explained, we were able to identify 40 new neutron-rich nuclei with atomic numbers between $Z=78$ and $Z=87$; ^{205}Pt , $^{207-210}\text{Au}$, $^{211-216}\text{Hg}$, $^{214-217}\text{Tl}$, $^{215-220}\text{Pb}$, $^{219-224}\text{Bi}$, $^{223-227}\text{Po}$, $^{225-229}\text{At}$, $^{230,231}\text{Rn}$, and ^{233}Fr .”

Adapted from reference (2013Fr09)

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