

DECAY SPECTROSCOPY OF ^{179}Pb

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The very neutron deficient lead isotope ^{179}Pb have been observed using the fusion evaporation reaction $^{104}\text{Pd} (^{78}\text{Kr}, 3n) ^{179}\text{Pb}$ with a cross section of around 200pb at the Accelerator Laboratory of University of Jyväskylä (JYFL), Finland. The gas-filled separator RITU [1] was employed to transport and separate the recoiling nuclei of interest from the scattered beam and unwanted products. The GREAT [2] spectrometer was used to study the decay of ^{179}Pb through alpha-alpha and alpha-gamma correlations, which has allowed to the ground-state configuration of ^{179}Pb to be assigned as $I^\pi = 9\frac{1}{2}^-$. The decay of ^{179}Pb was measured to have an energy and half-life of $E_\alpha = 7350(5)$ keV and $T_{1/2} = 2.7(2)$ ms, respectively. Mother (^{179}Pb) - daughter (^{175}Hg) correlated alpha-particle energy pairs and 80-keV gamma-rays in coincidence with the 7350(5)-keV alpha decay of ^{179}Pb were observed. The result will be discussed within the systematic frame work of the lead isotopes and also α -decay chains between $Z=82$ and $N=82$.

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