

α -DECAY PROPERTIES OF ^{190}Po AND THE IDENTIFICATION OF ^{191}Po ¹

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The α -decay properties of ^{190}Po were investigated through the use of a fragment mass analyzer in conjunction with a double-sided Si strip detector. The isotope was produced via the $^{96}\text{Mo}(^{96}\text{Mo},2n)$ reaction, and its α -decay energy and $T_{1/2}$ were measured as 7529(10) keV and $2.4^{+0.4}_{-0.3}$ ms, respectively. The resulting reduced width is nearly identical to that of the $^{192,194}\text{Po}$ isotopes. This is believed to result from significant mixing between the ground state $\pi(2p)$ and the low-lying $0^+ \pi(4p-2h)$ intruder state in the Po parent. The result provides further evidence for shape coexistence in the light Po isotopes. In addition, ^{191}Po was unambiguously identified, and the ^{186}Pb α -decay branch was determined experimentally for the first time.

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