

^{251}Lr

In the 2022 paper “Discovery of the new isotope ^{251}Lr : the impact of the hexacontetrapole deformation on single-proton orbital energies near the $Z=100$ deformed shell gap” T. Huang et al. present the first observation of ^{251}Lr (2022Hu21). The ATLAS linear accelerator at the Argonne National Laboratory delivered a 237 MeV ^{50}Ti beam to a 0.5 mg/cm^2 enriched ^{203}Tl target forming ^{251}Lr in the $2n$ evaporation reaction $^{203}\text{Tl}(^{50}\text{Ti},2n)$. The evaporation residues were separated with the Argonne Gas-Filled Analyzer (AGFA) and implanted in a double-sided silicon strip detector which also recorded subsequent correlated α decays. “Two α -decay activities with energies of 9210(19) and 9246(19) keV and the half-lives of 42_{-14}^{+42} ms and $24.4_{-4.5}^{+7.0}$ ms were observed which were followed by the known α decays of ^{247}Md and ^{243}Es . They are interpreted as originating from the $1/2^- [521]$ and $7/2^- [514]$ single-proton Nilsson states in the hitherto unknown isotope ^{251}Lr .”

Adapted from reference (2023Th03)

2022Hu21 T. Huang, D. Seweryniak, B. B. Back, P. C. Bender *et al.*, Phys. Rev. C **106**, L061301 (2022).

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](https://doi.org/10.11578/frib/2279152)”