# $^{264}$Lr

The first observation of $^{264}$Lr was reported in 2022 by Oganessian et al. in the paper "First experiment at the Super Heavy Element Factory: High cross section of $^{288}$Mc in the $^{243}$Am + $^{48}$Ca reaction and identification of new isotope $^{264}$Lr" (2022Og07). The new DC280 cyclotron at the Super Heavy Element Factory (SHE Factory) delivered $\sim$240 MeV $^{48}$Ca beams to 0.36 and 0.38 mg/cm$^2$ thick enriched $^{243}$Am targets. Fusion-evaporation residues were separated with the new DGFRS-2 separator where they were identified in two multiwire proportional chambers (MWPC) and two double-sided strip detectors (DSSD). The implantation events were correlated with subsequent $\alpha$ decays which were recorded in the DSSDs as well as eight strip detectors forming a box around the DSSD. "The $\alpha$ decay of $^{268}$Db with an energy of 7.6$-$8.0 MeV, half-life of $16^{+6}_{-4}$ h, and an $\alpha$ branch of $55^{+20}_{-15}$% was registered for the first time, and a new spontaneously fissioning isotope $^{264}$Lr with a half-life of $4.9^{+2.1}_{-1.3}$ h was synthesized."

Adapted from reference (2023Th03)


2022Og07 Yu. Ts. Oganessian, V. K. Utyonkov, N. D. Kovrizhnykh, F. Sh. Abdullin *et al.*, Phys. Rev. C **106**, L031301 (2022).

2023Th03 M. Thoennessen, Int. J. Mod. Phys. E **32**, 2330001 (2023).



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