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Detailed study of No and Rf isotopes radioactive decay properties.

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More than 20 years experiments to synthesis and study of super heavy elements radioactive decay property are carried out in the Laboratory of Nuclear Reactions. Basically complete fusion reactions of 48Ca accelerated beam with targets heavier than Uranium are used.

Isotopes of super heavy elements (SHE) are synthesized in the complete fusion reaction of heavy ions with target nuclei followed by neutron evaporation from exciting compound nucleus. Complete fusion reaction with neutron evaporation can be used for synthesis of limited SHE isotopes number. It is premised on presence of limited number of transuranium isotope elements which are used as a target.

The detailed study experiments of Rf and No radioactive decay properties were carried out on cyclotron U400 FLNR JINR 2018-2019 years. 256Rf was studied in the complete fusion reactions 50Ti +207 Pb \rightarrow 257 Rf*and* 50Ti + 208 Pb \rightarrow 258 Rf. The half-life times by spontaneous fission and alpha-decay were determined and decay modes probabilities were specified (b α = 0.0029 bSF = 0.9971) in a good agreement with existing data [1][2].

254No, 252No and 250No isotopes were synthesized in the complete fusion reactions $48Ca+208Pb\rightarrow 256No$, $48Ca+206Pb\rightarrow 254No$ and $48Ca+204Pb\rightarrow 252No^*$ respectively. These isotopes were studied for isomer stations.

- 1. F.P. Hessberger et. al.,//Spontaneous fission and alpha-decay properties of neutron deficient isotopes 257-253104 and 258106// Z. Phys. A 359, 415-425 (1997).
- 2. A.I. Svirikhin, A.V. Yeremin, I.N. Izosimov et. all., // Spontaneous Fission of 256 Rf, New Data// Physics of Particles and Nuclei Letters. 2016. V. 13. № 4. P. 480-482.

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