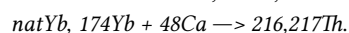
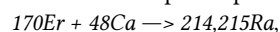


## Charge measurements of EvRs in experiments on the synthesis of Ra and Th on a new gas-filled separator DGFRS-II

Since 1998, experiments on the synthesis of superheavy elements (SHE) have been carried out at the Flerov Laboratory of Nuclear Reactions (FLNR) of the Joint Institute for Nuclear Research (JINR) on a gas-filled recoil separator (DGFRS). The heaviest element  $^{294}\text{Og}$  with  $Z = 118$  was registered in 2002, 2005, 2012 and 2015. In all these experiments,  $^{48}\text{Ca}$  heavy ion beams accelerated at the  $U-400$  cyclotron were used. Further use of calcium ions as an incident projectile does not allow the synthesis of elements heavier than  $^{294}\text{Og}$ , since there is no sufficiently stable target material. To conduct further studies of SHEs at the JINR FLNR, the SHE Factory based on the new  $DC-280$  cyclotron was created. Achieved beam intensity is 10 times higher than  $U-400$ . The first experimental setup of the SHE Factory is the new DGFRS-II which have configuration of QDQQD magnets ( $Q$  –quadrupole,  $D$  –dipole). The main feature of this setup is the high collection efficiency of synthesized superheavy nuclei, exceeds 60% for targets up to  $0.5 \text{ mg/cm}^2$  thick, which is 2 times higher than DGFRS-I. In 2019, test experiments on the new separator were conducted. The main goal of this experiments was to determine the optimal parameters of the DGFRS-II separator:



In this talk, results of this experiments are shown. For each experimental reaction charge of the synthesized nuclei were calculated together with dispersion on two main dipoles. Energy losses during evaporation residues transport were calculated as well.

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**Session Classification:** Will not participate

**Track Classification:** Section 2. Experimental and theoretical studies of nuclear reactions.