

## Experimental study of MNT process in the reaction $^{209}\text{Bi} + ^{238}\text{U}$ at energy 1.85 GeV

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Nowadays multinucleon transfer reactions (MNT) are considered as a perspective way to synthesize and investigate heavy and superheavy nuclei. Synthesis of superheavy elements in the MNT reactions in collisions of uranium ions with actinide nuclei is of particular interest. However, it is also important to obtain the experimental data in the reactions like  $^{209}\text{Bi} + ^{238}\text{U}$  for deeper understanding of the MNT mechanisms and planning the future experiments.

The  $^{209}\text{Bi} + ^{238}\text{U}$  reaction at  $^{209}\text{Bi}$  beam energy of 1.85 GeV was measured at the Flerov Laboratory of Nuclear Reactions with CORSET setup [1] to investigate mass and energy distributions of fragments formed in the MNT reactions. Primary and secondary mass and energy distributions of survived binary products (projectilelike and targetlike MNT fragments) have been obtained as a result of the measurements. Simultaneous using of three time-of-flight arms with energy measurements (ToF-E arms) allowed us also to register three body events: light MNT fragment and both products of sequential fission of excited heavy MNT fragment. As a result, primary mass distributions of fissioned targetlike MNT fragments have been recovered using ToF-E method. The obtained experimental results will be presented.

References:

[1] E. M. Kozulin et al., Instrum. Exp. Tech. 51, 44 (2008).

### Section

Experimental and theoretical studies of nuclear reactions

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