

## Production and spectroscopic investigation of Mercury and Radon isotopes produced in complete fusion reaction and multi-nucleon transfer reaction at MASHA facility

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In this paper, the production and spectroscopic investigation of Mercury and Radon isotopes was performed using complete fusion reactions neutron evaporation residues and multi-nucleon transfer reaction at the mass-separator MASHA. The MASHA setup is installed on the beam line of Cyclotron U-400M at Flerov Laboratory of Nuclear Reactions (FLNR) in Joint Institute for Nuclear Research (JINR), Dubna, Russia. The isotopes produced in complete fusion reactions  $^{148}\text{Sm}(^{40}\text{Ar}, xn)^{188-x}\text{Hg}$ ,  $^{166}\text{Er}(^{40}\text{Ar}, xn)^{206-x}\text{Rn}$  and multi-nucleon transfer reaction  $^{48}\text{Ca} + ^{242}\text{Pu}$  were passed through the magneto-optical system of MASHA setup with charge state  $Q=+1$  and were separated on the basis of their mass to charge ratio. For the detection of these isotopes, a position sensitive Si detector was used. Further, the experimental data obtained were analysed and spectroscopic investigations were carried out.

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