

STUDY OF THE EXCITATION OF ISOMERIC STATES IN (γ, n) , $(n, 2n)$ AND (n, γ) REACTIONS ON $^{198,200}\text{Hg}$ NUCLEI

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The isomeric ratios in reactions of the (γ, n) , $(n, 2n)$ and (n, γ) types on $^{180,200}\text{Hg}$ nuclei in the energy range of 10 – 35 MeV have been studied by the method of induced activity. Samples of mercury oxide (HgO) have been irradiated in the bremsstrahlung beam of the betatron of the National University of Uzbekistan in the energy range of 10 ± 35 MeV with an energy step of 1 MeV. For 14 MeV neutron irradiation we used the NG-150 [1] neutron generator of the Institute of Nuclear Physics. For the (n, γ) reaction, experiments were carried out at the BB3-CM research reactor of the Institute of Nuclear Physics of the Academy of Sciences of the Republic of Uzbekistan.

The induced γ -activity of the targets was measured on a Canberra γ -ray spectrometer, consisting of an HPGe germanium detector (with a relative efficiency of 15%, a resolution for the ^{60}Co 1332 keV line - 1.8 keV), a DSA 1000 digital analyzer, and a personal computer with the Genie software package.

The experimental results have been discussed, compared with those of other authors as well as considered by the statistical model. Theoretical values of the isomeric yield ratios have been calculated by using code TALYS-1.6 [2].

1. <http://www.inp.uz>
2. A.J. Koning, J.P. Delaroche. Nucl. Phys. A 713 (2003) 231.

The speaker is a student or young scientist

No

Section

1. Experimental and theoretical studies of nuclear reactions

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