PHOTODISINTEGRATION OF ^{186,188,189,190,192}Os ISOTOPES: LIKENESSES AND DIFFERENCES

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In continuation to evaluation of partial and total photoneutron reaction cross sections for ^{188,189}Os isotopes carried out [1] in the frame of experimentally-theoretical approach [2, 3, 4] using special criteria of data reliability [5] new evaluated data were obtained [6] for isotopes ^{186,190,192}Os on the base of experimental data [7] for photoneutron yield reaction cross section $\sigma^{exp}(\gamma,xn) = \sigma^{exp}[(\gamma,n) + 2\sigma(\gamma,2n) + 3\sigma(\gamma,3n) + \ldots]$. New data evaluated by the way $\sigma^{eval}(\gamma,in) = F^{theor}_i \cdot \sigma^{exp}(\gamma,xn)$ are reliable being obtained in conditions free from shortcomings of experimental measurement of outgoing neutron multiplicity sorting.

Energy dependencies of new reliable evaluated $\sigma(\gamma,n)$, $\sigma(\gamma,2n)$ and $\sigma(\gamma,3n)$ cross section data for ^{186,188,189,190,192}Os were compared to each other and to correspondent energy dependencies of neutron multiplicity functions $F_i = \sigma(\gamma,in)/\sigma(\gamma,xn) = \sigma(\gamma,in)/\sigma[(\gamma,1n) + 2(\gamma,2n) + 3(\gamma,3n) + \ldots]$. It was shown that deviations of F^{exp}_i from F^{thor}_i are individual for separate isotopes and are clear dependent on the shape of outgoing neutrons spectra. The differences in various reactions energy thresholds play definite role certainly. That confirms the supposition proposed before that the complex connection of neutron multiplicity and its kinetic energy is one of important sources of systematic uncertainties of neutron multiplicity sorting.

New evaluated cross sections were obtained for ^{186,188,189,190,192}Os partial (γ,n), $(\gamma,2n)$, $(\gamma,3n)$, and total photoneutron reaction $\sigma[(\gamma,1n) + (\gamma,2n) + (\gamma,3n) + \ldots] \approx \sigma(\gamma,abs)$ reactions cross sections.

Data for ^{186}Os$(\gamma,2n)^{184}$Os reaction are discussed from the point of view of astrophysical problems of formation of *p*–isotope ^{184}Os can not be produced in traditional s– and r–processes.

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