

Radiative Capture of Fast Neutrons
in ^{165}Ho and ^{181}Ta *

by

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ABSTRACT

The fast neutron capture cross sections of ^{165}Ho and ^{181}Ta were measured from 0.3 to 3.0 MeV. A 1300g large liquid scintillator with a time-resolution of 3 - 4 nsec was used for the detection of capture events. The time-of-flight technique was utilized for background suppression. A Grey Neutron Detector was used as a neutron flux monitor. The data were normalized at 500 keV to the standard capture cross section of gold. The resulting cross sections had an uncertainty of about 7 percent.

The present capture cross sections and activation cross sections reported in the literature were interpreted in terms of the statistical model, using the Hauser-Feshbach formalism and the gamma-cascade model (1).

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