

MEASUREMENTS OF ^{52}Cr EFFECTIVE TOTAL NEUTRON CROSS SECTION AT THE ENERGY 24 keV

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The total neutron cross section for ^{52}Cr nucleus was measured at the neutron energy 24 keV. The measurements were taken using the transmission method of filtered neutrons from reactor horizontal channel and chromium metal sample (enrichment 99,3 % ^{52}Cr , thickness $1,208 \cdot 10^{23}$ 1/cm²). The optimized content and characteristics of filtered neutron beam with the maximum of basic energy line $24,3 \pm 0,8$ keV and minimum of impurity energy lines were received using our own calculation code and modern neutron data from evaluated neutron data library JENDL-3.2. The calculated shape of nuclear spectra is shown just as the experimental value of filtered neutron flux from the 8th horizontal channel calculated with the activation of ^{197}Au thin sample. The measured value of ^{52}Cr effective total neutron cross section for 24 keV quasimonoenergetic neutrons - $\sigma_t^{\text{ef.}} = 2,099 \pm 0,012$ b was compared with known experimental values from CSISRS library and the values calculated with evaluated nuclear data libraries.