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THE SECOND NEUTRON SPECTRA OBTAINED AT 14 MeV NEUTRON ENERGY FROM SPHERICAL AND HEMISPHERICAL SAMPLES OF CONSTRUCTION MATERIALS. The results of measurements spectra of second neutrons in the range 0,4-14 MeV spherical and hemispherical models Mg, Al, Fe, Ni, Cu, Zr, Ti, Mo, C, CF, Pb, 138U, Be,H2O, D2O, CH2 by time-of-flight method under the action of 14 MeV neutrons are given in the work. Experimental results are given in the form of normalized instrumental spectra for 13 neutron energy ranges. The result of the work may be used for the correction of the nuclear data libraries.

MEASUREMENT AND ANALYSIS OF RESONANCE STRUCTURE FOR 238U TOTAL AND RADIATIVE CAPTURE CROSS SECTION IN ENERGY RANGE 0,465-200 keV. By method of the TOF in pulsed source of neutrons IBR-30 facility were measured total transmissions and self-indication functions In the radiative capture cross-section with different metallic samples of 238U. From measured transmissions group averaged total cross-sections, resonance self-shielding factors and average resonance parameters were obtained. Obtained results are compared with other data.

ABSOLUTE MEASURING OF NEUTRON CAPTURE CROSS SECTION OF *Cr* IN NEUTRON ENERGY REGION 1+20 keV. The neutron capture cross-section of natural chromium was preliminary measured for incident neutron energies over the range of 1 keV and 20 keV using an electron Linac neutron source, a time-of-flight technique and a multiplicity spectrometry method. Capture gamma-rays were detected by a two-layer *Nal(Tl)* crystal 4-
detector. The measurements were carried out at 25-m flight path with a resolution of 2,5 ns/m. The cross section, was normalized by the saturated resonance technique. The systematic errors of data obtained do not exceed 15%. These data are compared with results of other measurements**.**

48Ti NEUTRON CROSS SECTIONS IN THE MULTICHANNEL COUPLING METHOD. Strong channel coupling method with taking into account of a big number of collective levels of one- and two-phonon nature has been used for description of 0,5 to 5 MeV neutron cross-sections with 48Ti nucleus.

THE EVALUATED NEUTRON CROSS SECTIONS OF 234U IN THE THERMAL ENERGY REGION. The analysis of the experimental cross sections have been made up to 1 eV. The evaluated neutron cross sections $\sigma_t(E)$, $\sigma_\gamma(E)$, $\sigma_r(E)$ in the energy region 10-5 eV and the parameters of the negative resonance have been obtained.

A MODEL AND EXPERIMENTAL INVESTIGATIONS TO VALIDITY OF IRRADIATING FACILITIES OF 60Co PRODUCTION. It was carried out the evaluation of 60Co production in fast power reactor BN-600. Evaluated values were compared with experimental ones obtained
on critical assembly KOBRA**.**

TESTING OF SOME ACTINIDS NEUTRON DATA IN INTEGRAL EXPERIMENTS. The comparison of calculatlonal and experimental results on ratios of average across sections and reactivity coefficients for actinides 237Np, 238Pu, 241Am and 243Am measured into

various fast critical assemblies spectra is conducted. The calculational results with new group constants system BNAB-90 were obtained. Conclusions about the reliability of actinide fission and capture cross sections and possibility of its more accurate definition are made.

STUDY OF URANIUM-238 AND PLUTONIUM DOPPLER EFFECT IN THE CRITICAL ASSEMBLIES. The results of measurement* carried out in the zero power facilities BFS and KOBRA by oscillations of heater with samples are discussed in the paper. The algorithm of calculation analysis of such experiments is suggested. It is stated, that the constants of 238U make it possible to interpret the results of integral experiments in the broad energy range quite confidently. But plutonium constants demand further investigations with more hard spectra.

THE CROSS SECTION LIBRARY "BISERM" FOR CALCULATION OF THE HELIUM, HYDROGEN PRODUCTION AND DAMAGE RATE IN STRUCTURAL MATERIALS IRRADIATED WITH NUCLEONS AT THE ENERGIES UP TO 800 MeV. The cross section library "BISERM" has been developed fop the evaluation of the helium, hydrogen production and
damage rate in the energies from 15 to 800 MeV. The "BISERM" containes the helium, hydrogen and displacement cross sections have been calculated using the authors developed DIDACS/90
computer code.
THE ANALYTICAL PRESENTATION OF (γ, 2π)-REACTION CROSS SECTIONS FOR THE GAMMA-ACTIVATION ANALYSIS. The energy (γ,2n)-reaction cross section dependences were expressed by approximation formulae. Cross sections were approximated by means of degree dependence in the near threshold. The sum of two Lorentz curves was used in the rest area.