

Determination of the neutron flux on the IREN facility.

At the JINR FLNP, on the basis on the linear electron accelerator with an energy of up to 50 MeV, an IREN facility was created for research in the field of neutron physics. To perform various tasks, it is necessary to measure the neutron flux density in a wide range of energies - from thermal to fast. This problem is solved by the method of neutron activation analysis by means of gamma spectroscopy of high resolution.. For a more accurate determination of the flux resonant neutrons, it is necessary to calculate the effective resonance integrals taking into account features of a real spectrum of neutrons , and also to take into account the thermal motion and absorption of neutrons in the sample. For this purpose the program for computation of effective resonant integrals was created. Using this program, effective resonance integrals for ^{197}Au , ^{95}Zr , ^{97}Zr , ^{63}Cu were calculated, which are significantly differ from the values given in the reference book. These results were applied to more exact determination of flux density of neutrons.

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