

Li_2CO_3 powder case and/or cadmium cap, which both have been used to shield detector against neutrons, have been measured in the energy range of 60-1500 keV by using mono-energetic and multi-gamma emitting radionuclide calibrated point and standard ampoule sources. All absolute efficiency measurements were carried out at a source-to-detector distance of 77,5 and 15 cm at which coincidence summing effects are negligible to reduce neutron and gamma-ray background in vicinity of detector used for PGA purposes.



UZ0502768

40th ANNIVERSARY OF CYCLOTRON OF INSTITUTE OF NUCLEAR PHYSICS, TASHKENT

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The Cyclotron U-150-II of Institute of Nuclear Physics was projected in middle of the last century for nuclear-physical researches in a scientific research institute of electro physical equipment in Leningrad. The Cyclotron can accelerate positive ions with beam energy of the protons 18 MeV, deuterons 20 MeV, alpha particles 40 MeV. Intensity of a beam a little some microampere.

The building of a Cyclotron represents an impressive three-floor construction in volume of 2000 m³. The capital equipment, the high-frequency generator, sources of power supplies, vacuum pumps and other technological units are placed on the first and socle floors of a building. The second and third floors served for accommodation of scientific laboratories.

A building of a Cyclotron has three experimental halls, where it was possible to carry out physical researches. They have divided from each other, and the main thing from the accelerator, concrete walls with the purpose of reduction of the big radiating background at the working accelerator, preventing realization of experiments. It provided also biological protection of the on duty personnel.

The first some years of operation of the Cyclotron have revealed a line of lacks of this machine. For example, for change of energy of a beam of a Cyclotron it took 2-3 weeks. Also, for transition of acceleration of one particles to others it take same time. Time parameters of a beam were unstable.

In 1968 reconstruction of the Cyclotron has been started that has allowed to bring in basic changes to parameters U-150-II. The time took on change of an operating mode of a Cyclotron was sharply reduced, and it was possible to reduce it till 10-20 hours, to improve the energy and time resolution of a beam many times over, to reduce angular straggling of particles in a beam. And, all this enormous amount of works was spent by forces of institute.

In 70th years the big development was received with works on radiating stability of materials and manufacture of radioisotopes. The further reconstruction of the accelerator was required: intensity of a beam was increased up to 600 microampere. With this purpose were developed and made new plates, duants, target station. The technology of an irradiation of the targets was mastered maintaining the big thermal loadings.

In 1991 on the basis of a Cyclotron U-150-II, were created Scientific Technological Enterprise (STE) "TEZLATGICH" producing isotopes, basically Cobalt-57, and Joint Uzbek-German Enterprise "TEZINKO" through which delivery of radioactive isotopes for foreign countries. The Cyclotron became independent division and bringing significant currency receipts to the state. STE "TEZLATGICH" has increased the nomenclature of producing isotopes, such as Cd-109, Pd-103.



UZ0502769

THE INTERACTIVE APPROACH IN CREATION OF THE NUCLEAR - PHYSICAL REFERENCE BOOKS AND DATABASES IN INTERNET TECHNOLOGIES

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The interactive activity with physical formulas in a window of browser offers two aspects of their usage:

1. **Presentation aspect** – responsible for the demonstration of a formula.
2. **Computing aspect** – responsible for calculations using the formula.

There are some versions for implementation of presentation of the formula in a window of browser: mapping by the way of graphic files; XHTML with usage tags of fonts; graphic pieces, built-in in XHTML of page; Java-applets, generating mathematical formulas; mapping of the formulas with the help plug-in of dilating of browsers; built-in support of the specifications MathML in the browser. Modern technologies of mapping formulas in a window of a browser is dynamically developing in the direction of engaging of padding computing resources and there is a reasonable hope, that the leading browser makers will soon integrate built-in support MathML2 into the system. Unfortunately, it is not the case with the implementation of computational capabilities of the formulas in a window of a browser – this option does not exist yet. We offer two variants for the technology of implementation of computational capabilities of the formula:

1. Local version - which is based on local usage of the mathematical processor such as **MAPLE** or **MATHEMATIKA**.