

APPLICATION OF $^{27}\text{Al}(p,\gamma_2)^{28}\text{Si}^*$ (4.618 MeV) RESONANCE REACTION EXCITED AT PROTON ENERGY OF 2.489 MeV IN CALIBRATION EXPERIMENTS

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In this reaction the ^{28}Si level at the energy of 13.983 MeV with a width of 0.38 keV [1], [2] is excited. It discharges via gamma-quanta emission with the energies of 9.364, 2.839 and 1.779 MeV. By now [3] this reaction has been used to measure gamma-quanta recording efficiency of HPGe detector. In this paper its application for calibration of electrostatic accelerator energy scale is presented.

Dependence of gamma-quanta (2.839 MeV) yield from thick aluminum foil on a frequency of nuclear magnetic resonance (NMR) detecting element is presented in Fig.1. The detecting element of nuclear magnetic resonance measures magnetic induction of turning and analyzing accelerator magnet. A visible jump in gamma-quanta yield is due to the excitation of this resonance reaction. The work was aimed at the refinement of resonance position in the $^9\text{Be}(p,\alpha)^6\text{Li}^*$ (3.563 MeV) reaction.

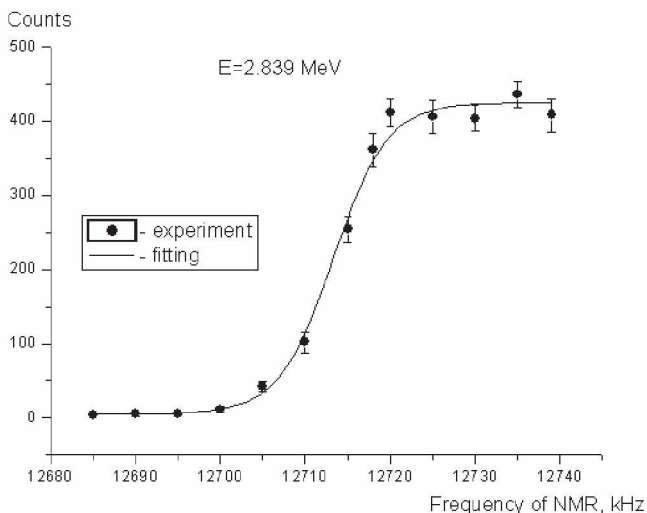


Fig.1. Gamma-quanta dependence on a frequency of NMR detecting element.

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2. B.P.Singh, H.C.Evans // NIM. 1971. V.97. P.475.
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