

Segmented semi-conductor spectrometer for studying of α - β - γ angular correlations in 4π -geometry

New semi-conductor spectrometer dedicated to study of α - β - γ angular correlations in 4π -geometry was created in close cooperation between JINR and Baltic Scientific Instruments. The main part of the spectrometer is an HPGe detector that has a segmented N-area with six segments. Each of the segments has an energy resolution (FWHM) better than 1 keV for the energy 122 keV (γ -line of Co-57) and better than 2 keV for the energy 1332 keV (γ -line of Co-60). The HPGe crystal has cylindrical coaxially drilled hole in the middle. Diameter of the through hole is 23 mm. The through hole and the crystal segmentation allow investigate $\gamma\gamma$ -coincidences in near 4π -geometry. Sensitive volume of the HPGe detector is 70 cm³, diameter and height of the crystal are 50 mm. Second part of the spectrometer is segmented Si-detector placed in the through hole. It gives an opportunity to study coincidences of γ -quanta with α - and β -particles.

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