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# The effects of the dead layer thickness increase to the regions in the spectrum response for a coaxial HPGe detector

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In the work, we studied the influences of dead layer thickness on the whole gamma spectrum response for HPGe detector by using Monte Carlo simulation. From the simulated relation of the FEPEs and the dead layer thicknesses, the dead layer thickness of 0.567 mm was derived which increased compared with the nominal value of 0.46 mm from manufacturer after 4 years of operation. The multiple scattering region and peak decreased with different rates and the valley region of the forward scattering photon increased quickly when the dead layer thickness increased. The energy dependence of the P/T and the general range were also carried out. The results showed that the effect of the increase in dead layer thickness on regions in the spectrum was not the same. Through this study, among several scintillators, it was possible to find a HPGe detector suitable for the purpose of the study

# Minioral

No

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