Pulse Height Resolution Of Organic Scintillators For Monoenergeticgamma Rays

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Summary

The pulse height resolution of the NE102A and NE230 organic scintillators has been measured for monoenergetic gamma rays. The measurements were carried out the cylindrical NE102A scintillators and the NE230 scintillator using the gamma-gamma coincidence technique over the gamma-ray energy range 0.5-1.3 MeV. The energy resolution of the 125-mm NE102A detector varies from 22.8 to 13.3% over this energy range, while its energy corresponding to the half height of the Compton edge is 20.3 to 13.1% higher than the maximum energy of Compton electrons. Over the same energy range the energy resolution of the 50-mm NE102A detector varies from 19.6 to 11.5%, and its energy corresponding to the half height of the Compton edge is 12.6 to 6.6% higher than the maximum energy of Compton electrons. The energy resolution of the NE230 scintillator varies from 12.9 to 7.1% over this energy range, while its energy corresponding to the half height of the Compton edge is 10.4 to 2.1% higher than the maximum energy of Compton electrons