

# **Abstract**

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## **Contribution of pair production process in full-energy peak efficiency calculation of semiconductor detectors for axial**

Study has been made of the contribution of the pair production process in calculation of detector efficiency. Particular attention has been paid to positron annihilation in flight; subsequent scattering of the annihilation quanta in the detector material. A mathematical formula has been derived to directly calculate the linear attenuation coefficient of the full-energy peak (mp) for a Ge (Li) detector using an axial point source. The calculated values of the photopeak efficiency are found to be in a good agreement with published experimental data.