

Polarization in CdZnTe and CdZnMn detectors

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Wide bandgap alloys of II-VI group materials are widely used for gamma-photon detection. The more established CdZnTe alloy is recently being challenged by CdMnTe, which shown improved uniformity and wider tunable bandgap. These compounds mostly owe their high resistivity to deep level compensation process (Fermi level “pinning”). Therefore, such compound “semi-insulators” have high densities of traps. In spite of that fact, such detectors exhibit reasonable charge collection. However, when they are exposed to high fluxes, considerable polarization is often observed. The later occurs due to high volume trapping, leading to modification of internal electric field. In this work we present the polarization differences in CdZnTe and CdMnTe devices grown by the same method. The study is performed by reconstruction of electric filed, using improved TCT method.

Collaboration

Role of Submitter

The presenter will be selected later by the Collaboration

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