Radiation-Degraded SI GaAs Detectors and Their Metallization

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Abstract. We fabricated the semi-insulating GaAs detectors of ionizing radiation operating at room temperature. Two different types of metallization were used to form Schottky barrier, the silver and the platinum. Their influence on detector radiation hardness was studied by measuring alpha and gamma spectra of ^{241}Am after detector degradation by 8 MeV electron beam to doses of 200, 500, 1000 and 1500 kGy. The quality of a semiconductor detector depends on the base semiconductor material and on the deposited metallization. The negligible influence of metallization material on final radiation hardness of detector was proven.