

Silicon Radiation Detectors with Rectifier Junction Prepared by Different Technological Procedures

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Abstract. We prepared Silicon radiation detectors, detector chip $5 \times 5 \text{ mm}^2$, by different technological procedures. Rectifier junction of detectors were fabricated in the form MOS structure (these detectors are well-known in the literature as Si-surface barrier detectors), in the form of p-n junction (these are named as p-n junction type detectors) or in the form of MS structure (it means Schottky barrier junction detectors). Current-voltage characteristic, the capacitance-voltage measurement and measurement of energy resolution with alpha radiation were performed for comparison of prepared detectors. Best values for the energy resolution with alpha source $^{239}\text{Pu} + ^{238}\text{Pu} + ^{244}\text{Cm}$ was obtained for Si p-n detectors, Si-surface barrier detectors and PtSi Schottky detectors show slightly worse energetic resolution.

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