

INFLUENCE OF THE GERMANIUM AND OXYGEN IMPURITIES ON THE RADIATION STABILITY OF THE SILICON

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Infrared absorption spectra of the Silicon single-crystals with the Germanium impurity ($\text{Ge} \leq 0,7$ at. %) after the irradiation by the reactor neutron fluences of $5 \cdot 10^{16} \text{ n/cm}^2$ and $5 \cdot 10^{19} \text{ n/cm}^2$ are measured. It was shown that the Germanium impurity increases the radiation strength of Cz-Si to the formation of such radiation defects as divacancies. Silicon structure with the content of the Germanium from 0 to 14 at. % was studied by the selective etching method. It was shown that the uniformity of the defect (dislocation) distribution is maintained at small Germanium content ≤ 1 at. % and its homogeneous distribution within the ingot. On the base of such material the spectrometrical detectors of nuclear radiation have been produced. High Germanium concentration adulterate the homogeneity of its distribution in Silicon.