

## THE PARTICULARITIES OF THE FORMATION OF RADIATION DEFECTS IN SILICON WITH LOW AND HIGH CONCENTRATION OF THE OXYGEN

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It has been studied the radiation hardness of the n-Si samples with low and high concentration of oxygen (in range from  $5 \cdot 10^{15}$  to  $7 \cdot 10^{17}$  cm<sup>-3</sup>), which were irradiated by fast-pile neutrons of WWR-M reactor. It has been shown that the fluence of fast-pile neutrons for which the concentration of the electrons tend to intrinsic value does not depend from the concentrations of oxygen. The dose and temperature dependences of the effective concentration of carriers have been measured. The theoretical calculation has been carried out in the framework of Gossik's model, taking into account the recharges of defects not only in n-Si conducting matrix but also in the space-charge region of defect clusters. The necessity of the additional overlapping of the space-charge regions resulting from the introduction of point defects has been shown. The model for explanation of dose dependence for n → p conversion in n-Si samples with low and high concentrations of the oxygen was proposed. It has been supposed that the space distribution of the assemblage of di-vacancies and Si di-interstitial atoms is responsible for Fermi level position near the midgap under high fluencies.