

14. ULTRASOUND INFLUENCE ON THE ELECTRICAL ACTIVITY OF RADIATION DEFECTS IN γ -IRRADIATED *n*-TYPE SILICON CRYSTALS

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The effect of the ultrasonic (US) processing in regime ($f_{US} = 8 \text{ МГц}$, $W_{US} = 2 \text{ Вт/см}^2$, $t \approx 10^4 \text{ с}$) on the transformation of radiation defects (RDs) in γ -irradiated ($D = 10^8$ and 10^9 рад) in Chochralski-grown *n*-type silicon single crystals ($9,5 \cdot 10^{17} \text{ см}^{-3}$) has been studied. The changes of the temperature dependence (100–300 K) of concentration $n(T)$ and mobility $\mu(T)$ of charge carriers after γ -irradiated (irreversible changes) and US processing (reverse) has been exposed. Energy positions of the defect levels E_a^i and their concentrations N_a^i from the theoretical computations were determined. Possibility of acoustostimulated transformation of definite RDs (divacancies V_2^- , $E_a^1 = (E_c - 0.424 \text{ eВ})$, modified *A*-center (*V* - O), $E_a^2 = (E_c - 0.205 \text{ eВ})$ and complex that can contain nitrogen (? + N), $E_a^3 = (E_c - 0,19 \text{ eВ})$) by means of change of configuration, structure and recharge for example two-dimensional energy configuration-coordinate model is considered.