

TEMPERATURE
DEPENDENCE OF THE EFFICIENCY
OF VACANCY GENERATION IN *n*-Si
AT THE 1-MeV ELECTRON IRRADIATION

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S u m m a r y

Temperature dependence of the efficiency of the generation of free vacancies, i.e. the vacancies formed as a result of the dissociation of Frenkel pairs (FPs) into independent components – vacancies and interstitial atoms, has been obtained experimentally in *n*-Si at the 1-MeV electron irradiation in the temperature range 100–633 K. It is established that this dependence is an increasing function in the range of temperatures 100–300 K, which tends to saturate at $T > 300$ K. It is shown that the change in the efficiency of free vacancy generation is governed by the function of the FP distribution in distances between FP components, the steepness of which rises with the increase in the temperature of the samples at irradiation. It is found that the change in the steepness of the FP distribution function is caused by an additional scattering of the “hot” interstitial atoms, formed in the process of irradiation, by the phonon oscillations of lattice atoms.