

GENERATION OF RADIATION AND THERMAL  
DEFECTS IN SILICON DURING 'HOT'  
ELECTRON IRRADIATION

*V.B. Neimash, M.M. Krasko, A.M. Kraitichinskii*

Institute of Physics, Nat. Acad. Sci. of Ukraine  
(46, Nauky Prosp., Kyiv 03028, Ukraine)

S u m m a r y

The influence of electronic (1 MeV) irradiation on the generation efficiency of oxygen thermal donors in silicon at 450 °C is investigated. The temperature of a sample (450 °C) was established due to heating by the electron beam. It is revealed that the electronic irradiation accelerates the oxygen thermal donor generation. Increasing the rate of thermal donor generation during the simultaneous irradiation of *n*-Si can be explained by the radiation-stimulated diffusion of oxygen atoms or/and the increasing of the radii of thermal donors' germs as for the trapping of oxygen atoms. It is also found that radiation defects of the acceptor type are created in *n*-Si during 'hot' electron irradiation. In particular, the efficiency of generation of these defects, that are created at 450 °C, is approximately  $3 \cdot 10^{-3} \text{ cm}^{-1}$ .