

INFLUENCE OF γ -IRRADIATION
ON THE PARAMETERS
OF SILICON-BASED
SOLAR CELLS

*N.I. Klyui, V.P. Kostylyov, V.G. Lytovchenko,
A.N. Lukyanov, V.V. Chernenko, V.I. Khivrych¹*

V.E. Lashkarev Institute of Semiconductor Physics,
Nat. Acad. Sci. of Ukraine
(41, Nauka Ave., Kyiv 03680, Ukraine),

¹Institute for Nuclear Research,
Nat. Acad. Sci. of Ukraine
(47, Nauka Ave., Kyiv 03680, Ukraine)

S u m m a r y

The mechanisms of the influence of γ -irradiation with the doses up to 10^8 rad on the recombination and photoenergetic parameters of solar cells (SCs) fabricated on the basis of single- and multi-crystalline silicon and uncovered or covered with a diamond-like carbon film (DLCF) have been studied. The efficiency of SCs covered with a thin antireflection DLCF and subjected to γ -radiation has been demonstrated to degrade to a less extent in comparison with that of SCs without the DLCF. In the case of γ -irradiation of SCs, which are based on multi-crystalline silicon, to the exposure doses $D \leq 10^6$ rad, the gettering of recombination-active impurities located in the bulk of SCs by grain boundaries has been found.