N5-O-049303

INVESTIGATION OF STEADY STATE X-RAY SENSITIVITY OF PAD SENSORS BASED ON UNDOPED SINGLE-CRYSTAL SILICON CARBIDE*

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The paper presents the results of an experimental investigation of steady state photocurrent and simulation of charge collection efficiency and photocurrent of silicon carbide pad sensors when irradiated with 10-60 keV X-ray quanta.

It has been experimentally shown that undoped single-crystal silicon carbide sensors are characterized by:

- linear dependence of the photocurrent value on X-ray photon flux intensity;
- absence of polarization effects when irradiated with low-intensity X-ray fluxes.

By comparing the simulated and experimental data on the photocurrent value, the lifetime of charge carriers was estimated.

REFERENCES

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*The investigation was supported with:
- Russian Federation grant FSWM-2022-0018 in part of charge collection efficiency and photocurrent simulation;
- Russian Federation grant 075-15-2022-1132 in part of experimental investigation of photocurrent dependence on X-ray intensity