

SIMULATION OF RADIATION HARDNESS OF CHROMIUM-COMPENSATED GALLIUM ARSENIDE SENSORS IRRADIATED WITH 1-10 MEV BETA-PARTICLES*

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The paper presents the results of charge carrier life times and charge collection efficiency simulation of chromium compensated gallium arsenide (HR GaAs:Cr) sensors irradiated with 1-10 MeV beta-particles. It has been established by simulation that charge collection efficiency reduces down to 1 % of initial value after irradiation of sensors with dose about 1 MGy.

It is shown with simulation that decrease of sensor thickness down to 100 – 150 µm allows increasing of radiation hardness up to 2 MGy for irradiation with 1-10 MeV beta-particles.

The simulation results are compared with experimental ones [1]. The result of comparison is discussed.

REFERENCES

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