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INVESTIGATION OF THE PARAMETERS OF NEW MAPD-3NM SILICON PHOTOMULTIPLIERS

Abstract

In the presented work, the parameters of MAPD-3NK and MAPD-3NM photodiodes with buried pixel structure manufactured by Zecotek Ph. are investigated. The current-voltage and capacitance-voltage characteristics, gain, the temperature coefficient of breakdown voltage, breakdown voltage and gamma ray detection performance (with LFS scintillator) of photodiodes were studied. The obtained results show that the newly developed MAPD-3NM photodiode outperforms the MAPD-3NK photodiode in most parameters and can be successfully applied in space application, medicine, high-energy physicist and security. New proposals were discussed to improve the parameters of the MAPD photodiodes to be produced in the coming years.