

Passivation and protection of a surface of photodiodes based on $\text{In}_{1-x}\text{Ga}_x\text{As}_{1-y}\text{P}_y/\text{InP}$ by the silicon-nitride film

D. S. Andreev¹, A. K. Budtolaev¹, O. V. Ogneva¹, M. A. Trishenkov², and I. V. Chinareva¹

¹Orion R&P Association Inc.

46/2 Enthusiasts highway, 111123, Moscow, Russia

E-mail: orion@orion-ir.ru

²Moscow State Technical University of Radio Engineering, Electronics and Automation

78 Vernadsky av., Moscow, 119454, Russia

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The article considers the method of $\text{In}_{1-x}\text{Ga}_x\text{As}_{1-y}\text{P}_y$ surface passivation and protection by its treatment in CF_4 and N_2 plasma and Si_3N_4 film deposition using the plasma-chemical method at temperatures not exceeding 200 °C. The technology developed provides for obtaining and stabilization of dark current density at $U = 10$ V at the level of 10^{-5} — 10^{-6} A/cm², as well as 0—20 cm⁻² density of microvoids with 10^7 V/cm dielectric strength.

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