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Photodetectors and birefringence in ZnP_2–C_{2h}^5 crystals

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Abstract

The spectral dependences of refractive indexes $n_o(n^{\perp})$, $n_e(n^{||})$ and $\Delta n=n_o(n^{\perp})-n_e(n^{||})$ were studied in ZnP_2–C_{2h}^5 crystals. The intersection of $n_o(n^{\perp})$ and $n_e(n^{||})$ was found for λ_o=0.906μm. The crystal possesses positive dispersion $\Delta n=n_o(n^{\perp})-n_e(n^{||})$ in the region where $\lambda>\lambda_o$, and a negative dispersion is observed in the region where $\lambda<\lambda_o$. The electrical, spectral and azimuth characteristics of monolith n–p- and Me-n–p-$ZnP_2C_{2h}^5$ and discrete ZnP_2–C_{2h}^5–ZnP_2–D_4^8 structures were studied, and a prognosis was made on the usage perspective of these devices.