



Energetic band structure of Zn_3P_2 crystals

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Abstract

Optical functions n , k , ε_1 , ε_2 and $d^2\varepsilon_2/dE^2$ have been determined from experimental reflection spectra in the region of 1–10eV. The revealed electronic transitions are localized in the Brillouin zone. The magnitude of valence band splitting caused by the spin–orbital interaction Δ_{SO} is lower than the splitting caused by the crystal field Δ_{CR} in the center of Brillouin zone and L and X points. The switching effects are investigated in Zn_3P_2 crystals. The characteristics of experimental samples with electric switching, adjustable resistors, and time relays based on Zn_3P_2 are presented.