

# EFFECTS OF PHOSPHOROUS IONS IMPLANTATION IN BULK CdTe CRYSTAL

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The CdTe monocrystals were grown from the melt by the modified high-pressure Bridgman method. The phosphorus particles flux in a range of  $5 \cdot 10^{13}$  to  $5 \cdot 10^{16}$  ions per  $\text{cm}^2$  were used to dope the host material.

Ellipsometric azimuths,  $\Psi$  and  $\Delta$ , were measured for three angles of incidence ( $65^\circ$ ,  $70^\circ$  and  $75^\circ$ ) in UV-VIS spectral range (0.5-6.5 eV) by the V-VASE ellipsometer (J.A.Woollam Co., Inc.). The transmittance spectra were recorded applying Cary 5000 spectrophotometer.

The changes in the optical constants of studied materials have been observed with transmittance measurements and spectrometric ellipsometry. Variations in refractive index ( $n$ ) and extinction coefficient ( $k$ ), which depends on the implantation of phosphorus ions in CdTe, are shown in Fig. 1.

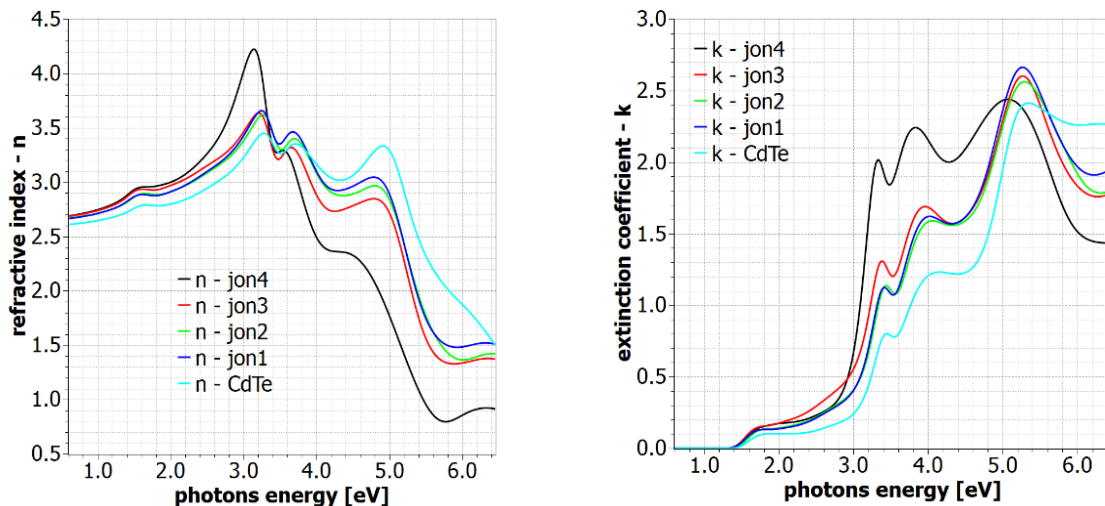


Fig. 1. Changes in refractive index ( $n$ ) and extinction coefficient ( $k$ ) for CdTe:P.

**Keywords:** bulk CdTe; ions implantation; ellipsometry

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