

INFLUENCE OF DOPING ON OPTICAL
AND PHOTO-ELECTRIC PROPERTIES
OF $\text{In}_4(\text{Se}_3)_{1-x}\text{Te}_{3x}$ SINGLE CRYSTALS

T.S. Moshkova, *T.A. Melnichuk, A.D. Ogorodnik,*
V.M. Strebezhev

Yurii Fed'kovych Chernivtsi National University
(2, Kotsyubynskiyi Str., Chernivtsi 58012, Ukraine;
e-mail: microel@chnu.cv.ua)

S u m m a r y

The results of electron microscopy studies of the peculiarities in a distribution of structure defects caused by a crystal lattice anisotropy and the growth conditions for $\text{In}_4(\text{Se}_3)_{1-x}\text{Te}_{3x}$ single crystals ($0 \leq x \leq 0.2$ and $0.68 \leq x \leq 1.0$) are presented. The influence exerted by these peculiarities and by doping the crystals with Ge, Sn, Hg, and Se impurities on both the IR transmittance of the crystals and the spectral distribution of the transverse Dember photo-emf in them has been studied. An optical antireflection coating of $\text{In}_4(\text{Se}_3)_{1-x}\text{Te}_{3x}$ and In_4Se_3 single crystals has been carried out making use of SiO and three-layer SiO–Ge–Si films. The optimal conditions for the growing of crystals destined for the production of optical filters and photosensitive cells operating in the near and middle IR ranges have been determined.