OPTICAL CHARACTERISTICS OF $Hg_3In_2Te_6$ AS A MATERIAL FOR 1.55-μm PHOTODIODES

L.A. Kosyachenko, I.I. German, S.Yu. Paranchych, S.G. Guminetsky

Yuri Fed'kovych Chernivtsi National University
(*2, Kotsyubyns'kyi Str., Chernivtsi 58012, Uktaine; e-mail: lakos@chv.ukrpack.net*)

S u m m a r y

We consider a semiconductor compound $Hg_3In_2Te_6$ as a material for photodiodes with optical characteristics optimal for quartz fibers. Based on the transmission and photosensitivity spectra of ITO—$Hg_3In_2Te_6$ diodes, we found the width of the forbidden band in the temperature range 248—353 K, while the reflection spectra of polarized light allowed us to obtain the curve of optical absorption in the range 0.4—1.7 μm. $Hg_3In_2Te_6$ and Ge photodiodes were compared from the viewpoint of their utilization in fiber-optics communication systems.