

ON INTERACTION OF HYDROGEN ATOMS  
WITH COMPLEX DEFECTS IN CdTe AND ZnTe

*D.I. Tsutsura, D.V.Korbutyak<sup>1</sup>, O.M. Pihur,  
N.D. Vakhnyak<sup>1</sup>, S.M. Kalytchuk<sup>1</sup>*

Ivan Franko Drogobych State Pedagogical University  
(24, Ivan Franko Str., Drogobych 82100, Ukraine;  
e-mail: *olia-ifm@yandex.ru, olia-ifmi@rambler.ru*),

<sup>1</sup>V.E. Lashkarev Institute of Semiconductor Physics,  
Nat. Acad. Sci. of Ukraine  
(41, Nauky Prosp., Kyiv 03860, Ukraine)

S u m m a r y

Low-temperature photoluminescence (PL) spectra of CdTe:Al and ZnTe single crystalline samples treated in a hydrogen gas discharge at  $T = 300$  K for 0.5 – 1.5 h are investigated. A model describing the relation of atomic hydrogen to complex defects ( $V_{\text{Cd/Zn}}^{2-}D^+$ ) and ( $V_{\text{Cd/Zn}}^{2-}2D^+$ ) in  $n$ -CdTe and  $p$ -ZnTe crystals is constructed. It is shown that the interaction of hydrogen with complex defects results in their decay and the passivation of one of the components. It is found that there occurs the passivation of donors in CdTe:Al ( $N_D > N_A$ ) samples and acceptors in ZnTe ( $N_A > N_D$ ), which induces the electric activity of the non-passivated components. This fact is in accordance with the investigations of PL at 5 K and the temperature dependences of electroconductivity.