

EFFECT OF THE IMPURITIES IN SUBSTRATES ZnSe ON PROPERTIES ISOVALENT SUBSTITUTED LAYERS ZnO

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In recent years great interesting for zinc oxide are raising. This is due to effective luminescence, photosensitivity and presence of laser electrooptical and piezoelectric effects [1]. For this cause, equally with work out of synthesis methods of bulk crystal, the growing technology of thin layers is developing as well. Most of them usually act as the active areas of devices of functional electronics. One of perspective technological way may be method by isovalent substitution (IVS), which

lets to create heterolayers ZnO with effective luminescence in UV-range of spectrum [2] on undoped substrates of chalcogenide zinc.

The present papers will an account finding of the studies type impurities of waters intro electrical and luminescence properties of like's heterolayers. Analyses have achieved for monocrystalline substrates ZnSe which preliminary are doped with typical donors (Al) and acceptors (Li and Bi) impurities [3]. Pay attention that all synthesized layers ZnO demonstrate the electron conductivity independently of type of substrates. At the same time top of conductivity is greatest for samples with impurities Al and Bi but for and undoped and with Li their indicating poor for. From the temperature

dependences σ_n , the ionization energies of energetically active centers in heterolayers ZnO are determined. Effects of impurities on spectrum of the luminescence are plotted in figure. Their analyses by methods of modulation spectroscopy let to determine the mechanism of emission recombination and parameters of accordance centers.

References

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