

driving force for crystallization. Change in Gibb's free energy provides information about glass stability and glass forming ability. The Difference between T_c & T_g also gives information about glass stability. It has been observed that ΔG increases with the increase of Ge content in $Ge_ySe_{94-y}In_6$ ($y=10, 15$ & 20) glassy series. The results reveal that the $Ge_{10}Se_{84}In_6$ glass possesses minimum value of ΔG and the maximum value of (T_c-T_g) , so, proving itself the most stable composition among the candidates of the series under test.

Laser induced changes of structure and optical properties of As-Sb-S amorphous films

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The report is devoted to the studies of laser irradiation and annealing influence on the optical characteristics and Raman spectra of $As_{40-x}Sb_xS_{60}$ ($0 \leq x \leq 12$) amorphous films prepared by the thermal evaporation of glasses of corresponding compositions and process laser writing of information elements on the surface of films with high sensitivity.

It is established that the laser irradiation and annealing of films leads to an absorption edge shift into the long-wave spectral region. The values of pseudoforbidden gap width E_g and refractive index n of films have been determined. The parameters of a single-oscillator model (oscillator energy E_0 , dispersion energy E_d , and effective coordination number per cation N_c) for the studied films are estimated. The maximum changes in optical characteristics are found for films with $x=4$ and 6 . Changes in the optical parameters of films are caused by structural transformations taking place in them under the irradiation and annealing. It was established that the laser irradiation of $As_{40-x}Sb_xSe_{60}$ films leads to the breaking and switching of As-As and S-S bonds in As_4S_4 , As_4S_3 , and S_n type structural fragments. accompanied with the formation of structural units with heteropolar bonds As-S (AsS_3). The role of a particular type of structural defects with over- and subcoordinated atoms of As and S is discussed.

The light exposure of inorganic photoresists $As_{40-x}Sb_xS_{60}$ with $x=4$ and 6 was carried out on the laser writing station. To obtain the relief micro-images on these inorganic photoresists we used some sort of anhydrous selective etchants based on amines. Shape control of the formed structure was provided by an atomic force microscope. Executed experiments on the lithographic recording by the 405 nm wavelength illumination using a focusing lens with aperture of 0.85 in these films have showed the possibility of obtaining the information elements ~ 150-300 nm.