



Formation of gap edges and shift of Fermi level in As_2S_3 - based glass alloys with addition of germanium

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Abstract

The gap formation with the composition change is studied on the basis of complex analysis of the experimental results obtained by investigation of optical absorption and conductivity of both As_2S_3 Ge glassy materials and heterostructures with crystalline silicon as their basis. It is shown that the gap of the above materials narrows with germanium concentration increase due to shifts of the valence band top. The stationary Fermi level shifts in this case relatively both edges of the allowed bands but it appears to be more fastened to the valence band edge.