

CONCENTRATION MECHANISM OF PIEZOPHOTOCONDUCTIVITY

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S u m m a r y

The results of the studies of piezophotoconductance of semiconductors, i.e. a component of electroconductance which is proportional to the light intensity times the mechanical strain, are reported. The experimental researches have been carried out making use of crystals of the layered structure In_4Se_3 . The oscillation character of the piezophotoconductance spectrum at the light frequency corresponding to interband absorption has been revealed. The phase shift of piezophotoconductance with respect to the phase of the modulating factor, which may amount to $\pi/2$, has been established. On the basis of quantum-mechanical calculations of the probability of transitions under the combined action of light and a time-dependent mechanical strain, the piezophotoconductance spectra have been analyzed. It has been shown that the oscillation character of the piezophotoconductance spectra and retardation effects in their dynamics are caused by peculiarities of the generation of nonequilibrium current carriers and that the piezophotosensitivity depends on the lifetime of the latter.