

ACOUSTOSTIMULATED
CHANGE OF ELECTRON
MOBILITY IN n -Cd_xHg_{1-x}Te CRYSTALS

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S u m m a r y

Electron mobility of n -Cd_xHg_{1-x}Te crystals is investigated at a dynamic ultrasound loading ($W_{US} \leq 10^4$ W/m², $f = 5 \div 7$ Hz). A mobility increases in the region of impurity conductivity ($T < 120$ K) - the biggest effect had displayed in nonuniform crystals - and a mobility decrease in the region of intrinsic conductivity ($T > 120$ K) for all measured samples are observed. Possible mechanisms of the ultrasound influence on mobility with taking into account optical phonons, disorder, ionized impurity scattering mechanisms, and conditions for the current flow in a crystal are analyzed. It is demonstrated that the main reason for the mobility increase in the region of impurity conductivity is downsizing of the macropotential in the crystal, and an increase of the scattering intensity on optical phonons results in a decrease of carrier's mobility in the region of intrinsic conductivity.