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摘要: The dependence of terahertz (THz) radiation on the excitation wavelength of femtosecond pulses (from 640 to 2600 nm) was investigated. Four different materials, InAs, InSb, InN and GaAs, were analyzed. The generated THz amplitude increases linearly with the photon energy due to the reduced absorption length and the increased quasi-ballistic transit distance. When the electron excess energy reaches the position of the subsidiary conduction band valleys, the intervalley scattering sets in and the THz amplitude drops. Thus, this method allows us to determine intervalley separation of various semiconductors. THz generation due to subsurface band bending in GaAs was observed as well.
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