

INFRARED LIGHT SCATTERING
BY PLASMONS IN *p*-Ge

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S u m m a r y

We report the observation of inelastic scattering of infrared radiation from a CO₂ laser by collective excitations of free carriers in *p*-type germanium with concentrations ranging from $1.4 \cdot 10^{17}$ to $7.2 \cdot 10^{17}$ holes·cm⁻³. The observed dependence of the plasma frequency on the carrier concentration is markedly different from that obtained from the Drude-type permittivity for free carriers. The effect is caused by interband electronic transitions from the heavy- to light-hole bands.