The effect of broadening on the optical dielectric function of GaAs and AlAs

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ABSTRACT

Optical dielectric function model of Ozaki and Adachi [J. Appl. Phys. 78, 3380 (1995)] is augmented by introducing Gaussian-like broadening function instead of Lorentzian broadening. In this way a consistent and comparatively simple analytic formula has been obtained, which accurately describes the optical dielectric function of GaAs and AlAs in a wide spectral range between 0.1 and 6 eV

INDEX TERMS

- **IEEE Terms**
  Absorption , Charge carrier processes , Damping , Dielectrics , Differential equations , Frequency dependence , Gallium arsenide , Gaussian processes , Optical scattering , Particle scattering
- **INSPEC**
  - **Controlled Indexing**
    Gaussian distribution , III-V semiconductors , aluminium compounds , dielectric function , gallium arsenide
  - **Non Controlled Indexing**
    0.1 to 6 eV , AlAs , GaAs , Gaussian broadening function , optical dielectric function

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