

عنوان مقاله:

Finite thickness effects on collective excitations spectrum in a coupled quasi two-dimensional electron-LO phonon system

محل انتشار:

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خلاصه مقاله:

In this paper, we have studied the collective excitations spectrum (plasmons) of a coupled electron-LO phonon system in a two dimensional (nanolayer) polar semiconductor. We have considered both electron-electron coulomb interaction and electron-LO phonon Fröhlich interaction in an equal footing to obtain a general dielectric function within the RPA. We have investigated the effect of finite thickness on the plasmon dispersion relation. Our numerical results show that by considering the nanolayer width, the plasmon energies decrease

کلمات کلیدی:

collective excitations, plasmons, quasi two-dimensional electron gas

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