

Abstract Submitted
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Configuration interaction in a tunable wavelength shifter ALEKSEJ MIALITSIN, National Renewable Energy Laboratory, ILIA SOLOV'YOV, Beckman Institute for Advanced Science and Technology, STEFAN SCHMULT, Namlab, BRIAN FLUEGEL, ANGELO MASCARENHAS, National Renewable Energy Laboratory — It has recently been demonstrated how hybridized plasmon-phonon collective excitations in GaAs can be blue shifted by about 20 wavenumbers (0.6 THz) relative to the unperturbed longitudinal optical lattice vibration frequency as a function of excitation beam intensity [Fluegel et al., Nat. Phot. 1, 701 (2007)]. At beam intensities greater than 10 mW/cm^{-2} the wavelength shifted mode broadens and begins to exhibit a double-peak structure. We attribute this line-shape modification to configuration interaction of the named mode with the edge of the continuous background and discuss potential implications for coupled plasmon-phonon modes generated in semiconductor hetero-structures.

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