

Abstract Submitted
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Phonon spectra of the high-frequency modes in dilute nitride random $\text{GaN}_x\text{As}_{1-x}$ alloy¹ AMANUEL TEWELDEBERHAN, Tyndall National Institute, Lee Maltings, Prospect Row, Cork, Ireland, STEPHEN FAHY, Department of Physics, University College Cork, Ireland — The broadening of the highly localized isolated vibrational mode in GaNAs has been studied using the force constants between nearest-neighbor and second-nearest neighbor nitrogen pairs obtained from density functional theory supercell calculations. The phonon spectra of the high-frequency modes associated with substitutional nitrogen atoms in the random alloy are calculated for different nitrogen concentrations.

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