



Raman scattering from LO–phonon–plasmon coupled modes in Ag-coated GaN nanocrystals

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Available online 28 July 2004.

Abstract

Relationships are studied governing the Raman scattering spectra in GaN nanocrystals grown by HVPE on substrates of oxidized silicon with Ag atoms deposited in a UHV system. It is found that the intensity of an LO–phonon–plasmon coupled mode in GaN nanocrystals is increasing initially as metal atoms are deposited on their surface to a thickness of 3 nm and then decreasing. It is suggested that the intensity increase of this mode is due to increasing near-surface barrier height and the space-charge layer width.

Author Keywords: Raman scattering; GaN nanocrystal; Phonon–plasmon mode

63.20.Ls; 78.30.–j

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