

Raman Modes in Porous GaP under Hydrostatic Pressure

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Abstract

Bulk and free-standing porous membranes of GaP have been characterised by Raman spectroscopy under hydrostatic pressure, with emphasis to the Fröhlich surface vibration mode. Under compression, an increase in the frequency gap between the Fröhlich mode and the LO phonon has been observed, which is attributed to pressure-induced changes in the anharmonicity of the surface-related modes and, possibly, to the relative increase of the dielectric constant of the surrounding effective medium, through better wetting under compression.

Keywords: porous membranes, Raman spectroscopy, Fröhlich surface vibrations, anharmonicity

Citing Literature

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