Phononic crystals and superlattices
IR reflection of optical phonons in GaN/AlGaN superlattices
1Institute of Semiconductor Physics, Lavrentiev Av. 13, 630090 Novosibirsk, Russia
2Ioffe Physico-Technical Institute, Politechnicheskaya, 26, 194021 St. Petersburg, Russia
3Institut für Physik, Technische Universität Chemnitz, 09107 Chemnitz, Germany
email: Alexander G. Milekhin (milekhin@thermo.isp.nsc.ru)

*Correspondence to Alexander G. Milekhin, Phone: +7 383 2 34 35 91, Fax: +7 383 2 33 27 71

Keywords
63.22.+m • 78.30.Fs • 78.67.Hc

Abstract

We present the IR study of vibrational properties of GaN/Al0.28Ga0.72N superlattices with different thickness of superlattice layers. IR reflection spectra of the superlattices were taken at normal and off-normal incidence using p-polarised light in order to analyze optical phonons propagating both along and perpendicular to the layer surface. Optical phonon frequencies as well as thickness of the structure layers were determined from a comparison of the experimental IR reflection spectra to those calculated in the framework of the dielectric continuum model. (© 2004 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim)