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# Raman scattering by porous structures with InAs quantum dots

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## Abstract

In this paper we search for the possibilities of introducing porosity in InAs/AlAs/GaAs multilayer quantum dot structures as an additional tool for the modification of their phonon spectrum. Raman spectroscopy is used as a primary method of investigation of quantum dot phonon spectrum. Introduction of porosity in quantum dot structures leads to alteration of optical phonon frequencies in quantum dots due to relaxation of built-in mechanical strain in quantum dots and appearance of Froehlich modes. Magnification of the Raman replicas by optical phonons in quantum dots is explained by multiple light reflection in the porous structure.