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Numerical modelling of auto-organized InAs/ InP quantum wires with different shapes

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Abstract

In this paper, energy levels of electrons and holes for different shapes of isolated and self-organized InAs/InP quantum wire are calculated. We have used a theoretical method based on the coordinate transformation employing a newly analytical function to resolve the Schrödinger equation. The purpose of this work is to show how the shape of the quantum wire depend on the parameters introduced in the function and to discuss the effect of the wire height on the energy levels. The optical transitions energies are also investigated.

Keywords: InAs/InP, Coordinate transformation, FDM, Transition energy.

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