# Optical properties of Si quantum dot potential under pressure effect ( Conference Paper )

## Abstract

Further study of the quantum dot potential under hydrostatic pressure for Si is presented. This potential has been calculated by means of our recent empirical model. The indirect energy gap (Γ-X) is calculated using the full potential-linearized augmented plane wave (FP-LAPW) method. The Engel-Vosko generalized gradient approximation (EV-GGA) formalism is used to optimize the corresponding potential for energetic transition and optical properties calculations of Si. The refractive index and transverse effective charge are predicted under pressure effect. The pressure effect is used to test the validity of our model. The results are compared with others and showed reasonable agreement. © (2012) Trans Tech Publications, Switzerland.