عنوان مقاله:

Scaling Issue of the Optical Absorption of Cylindrical Silicon Nanowires Array

محل انتشار:

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خلاصه مقاله:

The optical absorption of cylindrical silicon nanowires array is investigated by an analytical model. Here using the Fermi golden rule and the electron wave function and energy spectrum of cylindrical nanowire we obtain the absorptivity for the arrays with different lattice constant and nanowire radius. The results indicated that there are different peaks due to the intersubbands absorption. Also, it demonstrates that the absorption of nanowire arrays improves with reducing lattice constant and increasing nanowire radius. Moreover, the effect of temperature on the optical absorption is studied.

کلمات کلیدی:

Absorption coefficient; silicon; nanowire