Effect of the Applied Bias on Mini-Band Structures in Dimer Fibonacci InAs/Ga1-XInXAs Superlattices

Authors : Z. Aziz, S. Terkhi, Y. Sefir, R. Djelti, S. Bentata

Abstract : The effect of a uniform electric field across multi-barrier systems (InAs/InxGa1-xAs) is exhaustively explored by a computational model using exact Airy function formalism and the transfer-matrix technique. In the case of biased DFHBSL structure a strong reduction in transmission properties was observed and the width of the mini-band structure linearly decreases with the increase of the applied bias. This is due to the confinement of the states in the mini-band structure, which becomes increasingly important (Wannier-Stark Effect).

Keywords : dimer fibonacci height barrier superlattices, singular extended state, exact Airy function and transfer matrix formalism, bioinformatics

Conference Title : ICBB 2014 : International Conference on Bioinformatics and Biomedicine

Conference Location : Istanbul, Türkiye

Conference Dates : May 22-23, 2014