

Effect of the Aluminium Concentration on the Laser Wavelength of Random Trimer Barrier Al_xGa_{1-x}As Superlattices

Authors : Samir Bentata, Fatima Bendahma

Abstract : We have numerically investigated the effect of Aluminium concentration on the the laser wavelength of random trimer barrier Al_xGa_{1-x}As superlattices (RTBSL). Such systems consist of two different structures randomly distributed along the growth direction, with the additional constraint that the barriers of one kind appear in triply. An explicit formula is given for evaluating the transmission coefficient of superlattices (SL's) with intentional correlated disorder. The method is based on Airy function formalism and the transfer-matrix technique. We discuss the impact of the Aluminium concentration associate to the structure profile on the laser wavelengths.

Keywords : superlattices, correlated disorder, transmission coefficient, laser wavelength

Conference Title : ICMMM 2015 : International Conference on Microelectronics, Microprocessors and Microsystems

Conference Location : Jeddah, Saudi Arabia

Conference Dates : January 26-27, 2015