

The advantage of low growth temperature and V/III ratio for In(x)Ga(1-x)As nanowires growth

Abstract:

Cylindrical In_xGa_{1-x}As nanowires (NWs) perpendicular to the substrate have been successfully grown using MOCVD. Morphology of In_xGa_{1-x}As NWs has been observed using Field Emission-Scanning Electron Microscopy (FE-SEM) and Transmission Electron Microscopy (TEM). Both FE-SEM and TEM results show that the NWs grown at low growth temperature and V/III ratio were via direct impinging mechanism. Energy Dispersive X-ray spectroscopy (EDX) results confirm that the cylindrical NWs grown via direct impinging mechanism and tends to have uniform chemical composition.