DETERMINATION OF JUNCTION PARAMETERS OF GaAs/$Al_xGa_{1-x}As$ HETEROJUNCTION BY CURRENT-VOLTAGE(IV) AND CAPACITANCE-VOLTAGE(CV) TECHNIQUES

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The GaAs/$Al_{0.3}Ga_{0.7}As$ heterojunction has been studied using IV and CV techniques. The samples were grown by molecular beam epitaxy. The measurements were performed on (n - N) heterojunctions with carrier concentrations in the range of 10^{16} to 10^{17} cm^{-3}. The conduction band offset and the interface charge density of the junction was found to be 67% and 1.6 x 10^{10} cm^{-2} respectively. These values are in good agreement with the reported values obtained from other electrical and optical methods. The junction diffusion potentials estimated using the two methods are found to be in reasonable agreement.

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