Tipe Koleksi: Indeks Artikel Jurnal

Studies of random ION implantations and their effects on GaAs samples using rutherford backscattering channeling spectrometry

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Abstrak

In this research, damage profile of random implanted SI-GaAs samples were investigated using rutherford backscattering (RBS) channeling spectrometry. Random implatations were performed using 400 keV germanium ions with several ion doses, namely: 3x10 13, 1x10 13, 3x10 12, 1x10 12, 3x10 11, and 1x10 11 ions/cm3. The effects of ion doses on the crystal structures of GaAs samples were studied. The results showed that RBS yields were monotonically effected by the ion dose of implantations. The damage profiles of GaAS samples were also compared and analyzed using TRIM 98 calculation. These results clearly indicated that the RBS yields and the RBS profiles corresponded to the damage induced by ion implantation in the GaAs samples.