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Magnetic clusters in Co ion-implanted GaN

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Abstract

The structural and optical properties of Co ion-implanted GaN were investigated by various measurements. HRXRD, TEM, and SADP results did not show any peaks associated with second phase formation. XPS depth measurements showed the metallic Co 2p core levels for 700–900 °C annealed-samples. From XPS results, it could be explained that magnetic property of our films originated from Co or CoGa magnetic clusters. The PL spectra obtained at 10 K display a clear intensity modulation, indicating that the optical interference effect occurs in the layers.

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