

Growth of Epitaxial Gallium Nitride film on c-plane Sapphire using Ga(mDTC)3 precursor by MHVPE

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Tris N,N-dimethyldithiocarbamate gallium (III) (Ga(mDTC)3) is used as precursor for formation of GaN seed-layer. GaN seed layer is deposited by a spin-coating method and then this layer is nitrified on c-plane sapphire substrate in NH₃/N₂ ambient circumstance before the deposition of GaN epitaxial layer using a modified hydride vapor phase epitaxy (MHVPE). Structural properties and surface morphologies of GaN layers are analyzed by X-ray diffractometer (PANalytical, X'Pert PRO) and Scanning Electron Microscope (Hitachi, S-4100). The band structures of GaN films are investigated by a photo-luminescence spectroscopic method.

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