

Title (en)
III-NITRIDE LAYER GROWN ON A SUBSTRATE

Title (de)
AUF EINEM SUBSTRAT GEZÜCHTETE III-NITRIDSCHICHT

Title (fr)
COUCHE DE NITRURE DU GROUPE III DE CROISSANCE SUR UN SUBSTRAT

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Application
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Abstract (en)
[origin: WO2012059843A1] In a method according to embodiments of the invention, a III-nitride layer is grown on a substrate. The substrate is $RAO_3(MO)_n$, where R is selected from Sc, In, Y, and the lanthanides; A is selected from Fe (III), Ga, and Al; M is selected from Mg, Mn, Fe (II), Co, Cu, Zn and Cd; and n is an integer = 1. In some embodiments, $[(a_{\text{substrate}} - a_{\text{layer}})/a_{\text{substrate}}] \times 100\%$ is no more than 1%, where $a_{\text{substrate}}$ is an in-plane lattice constant of the substrate and a_{layer} is a bulk lattice constant of the III-nitride layer. In another method according to embodiments of the invention, a III-nitride layer is grown on a substrate. The substrate is a non-III-nitride material. The III-nitride layer is a ternary, quaternary, or quinary alloy. The III-nitride layer is thick enough to be mechanically self-supporting and has a low defect density.

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