



Fig.1: Surface and cross sectional images of the grown layers.

Content:

Nitride semiconductors are one of the most attractive candidates for LEDs. The problem of the crystal growth of nitrides is no suitable substrate with good lattice matching and low price.

In order to obtain nitride substrates at low cost, we grow GaN by a direct synthesis method (DSM) and AlN by a sublimation method (or physical vapor transport). Both methods are low-cost growth method.

Figure 1(a) shows the surface and cross sectional images of the c-face GaN grown on c-plane sapphire and (b) a-face GaN on r-plane sapphire. Both grown layers are relatively high quality and can be used as substrates for the growth of nitrides.

Figure 1(c) shows the AlN layer grown by a sublimation method. The grown layer is relatively high quality. We grew AlGaN by MOCVD on the AlN substrate and the grown AlGaN layer shows good luminescence.

Keywords: AlN, GaN, bulk crystal growth

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