Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Bimodal 3D islands of InGaN self-assembled on GaN LIU YING, XIE MAOHAI, HKU — Initial stage InGaN alloy growth on GaN(0001) by molecular-beam epitaxy has been followed by in situ reflection of high-energy electron diffraction and scanning tunneling microscopy. It is found that the three-dimensional, Stranski-Krastanov islands evolve from the initial cone-shape to finally the pillar shape with flat-tops as they grow. The small, cone-shaped islands are inferred to be coherent to the underlying GaN, whereas for the pillar-like large islands, they are dislocated. Within a certain range of material coverage, the two types of islands coexist on surface. As the deposition proceeds, they grow with vastly different rates, leading to an overall bimodal island size distribution.

Liu Ying
HKU

Date submitted: 22 Dec 2004 Electronic form version 1.4