

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Characterization of M -plane InGaN/GaN Quantum Wells Grown on Misoriented γ -LiAlO₂ by Plasma-Assisted Molecular Beam Epitaxy
YU-CHIAO LIN, IKAI LO, CHENG-HUNG SHIH, ZHANG WEI XIANG, Department of Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan, MING-CHI CHOU, Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Kaohsiung, Taiwan — We have grown a series of InGaN/GaN quantum wells on misoriented LiAlO₂ (LAO) substrate with different growth parameters by plasma-assisted molecular beam epitaxy (PAMBE). The sample structure consists of M -plane InGaN/GaN quantum wells(25nm GaN barrier/5nm InGaN well) with a \sim 225nm GaN buffer layer between the quantum wells and LAO substrate. The mis-cut angle of LAO substrate was tilted 11° off [011] direction to match the atoms of GaN lattice. From the X-ray diffraction (XRD) measurement, we found two peaks of 34.6° and 32.2°, indicating the LAO(100) substrate and [1 $\bar{1}$ 00] oriented (M -plane) for the GaN thin films, respectively. The surface morphology, optical property and microstructure of the samples were investigated by scanning electron microscope (SEM), photoluminescence (PL) and transmission electron microscope (TEM) measurements, as well.

Yu-Chiao Lin
Dept of Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan

Date submitted: 11 Nov 2014

Electronic form version 1.4