Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

GaN/InGaN/GaN high electron mobility transistor fabricated by RF-MBE CHIA HO HSIEH, Institute of Materials Science and Engineering, National Sun Yat-Sen University, Kaohsiung, Taiwan, R.O.C, MING HOM GAU, KUANG YAO CHEN, Department of Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan, R.O.C — The GaN/$In_xGa_{(1-x)}N$/GaN high electron mobility transistor (HEMT) growth on c-plane sapphire substrate by RF plasma assisted molecular beam epitaxy. The sample were investigated by reflection high-energy diffraction, high resolution x-ray diffraction, field-emission scanning electron microscopy, and Hall effect measurement. Flat interface were monitored by RHEED pattern, as well as smooth morphology determined by FESEM. The effect of the fraction factor x and InGaN thickness on electronic properties were determined from Hall measurement data. The mobility in the designed structure is around 5 cm^2/Vs at room temperature (300 ^0K), but at low temperature (77 ^0K) the value of mobility is increased to 400 cm^2/Vs.

Ilai Lo
Department of Physics, National Sun Yat-Sen University
Kaohsiung, Taiwan, R.O.C

Date submitted: 05 Jan 2005 Electronic form version 1.4