

AlN Templates



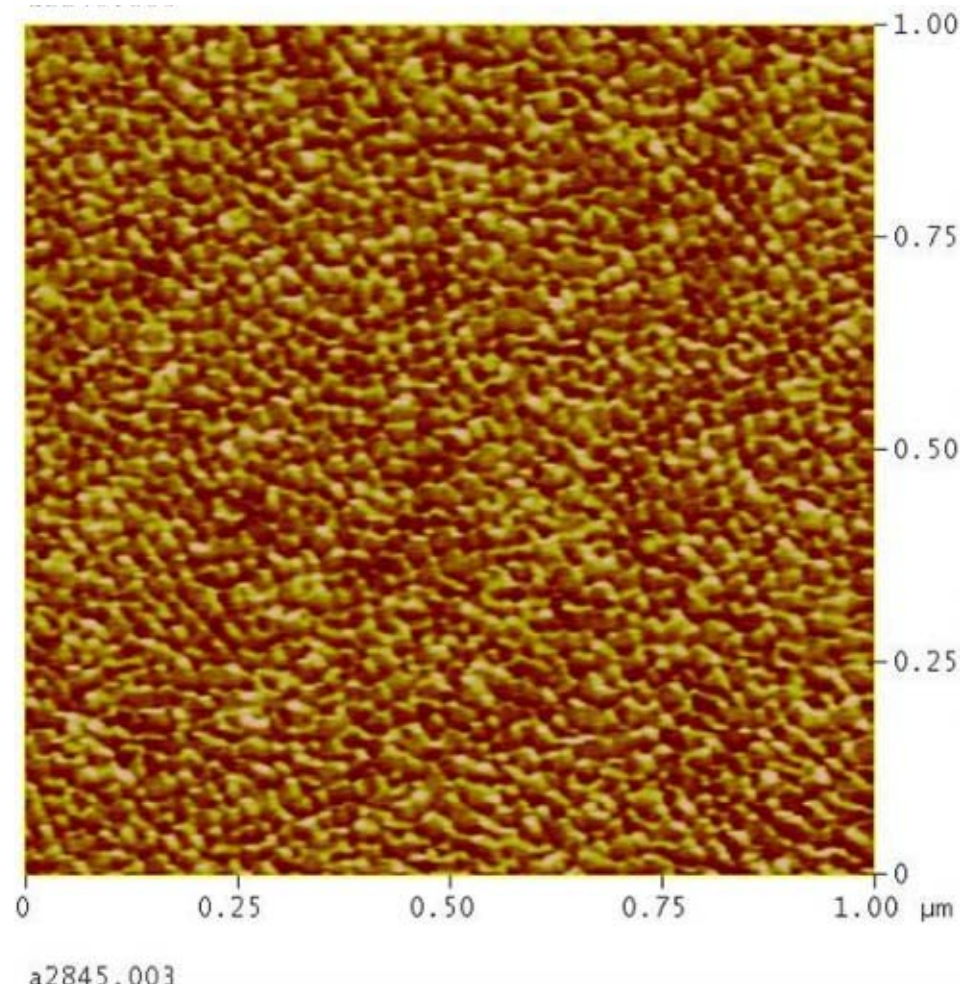
The New Wave in Nitride Semiconductor Materials

AlN Templates

- Repeatable and uniform nucleation surface for epitaxy
 - f <1nm RMS roughness
 - f AlN thickness of 0.5 μ m
 - f (00.2) FWHM routinely below 20 arcsec
- Available on sapphire, SiC, silicon, or customer supplied substrates
 - f 2", 3", and 100mm wafers
 - f Production quantities available
 - f Epi-ready (no additional processing required)
- GaN epitaxy on our AlN templates is high quality and repeatable
 - f We use these templates for our GaN also!

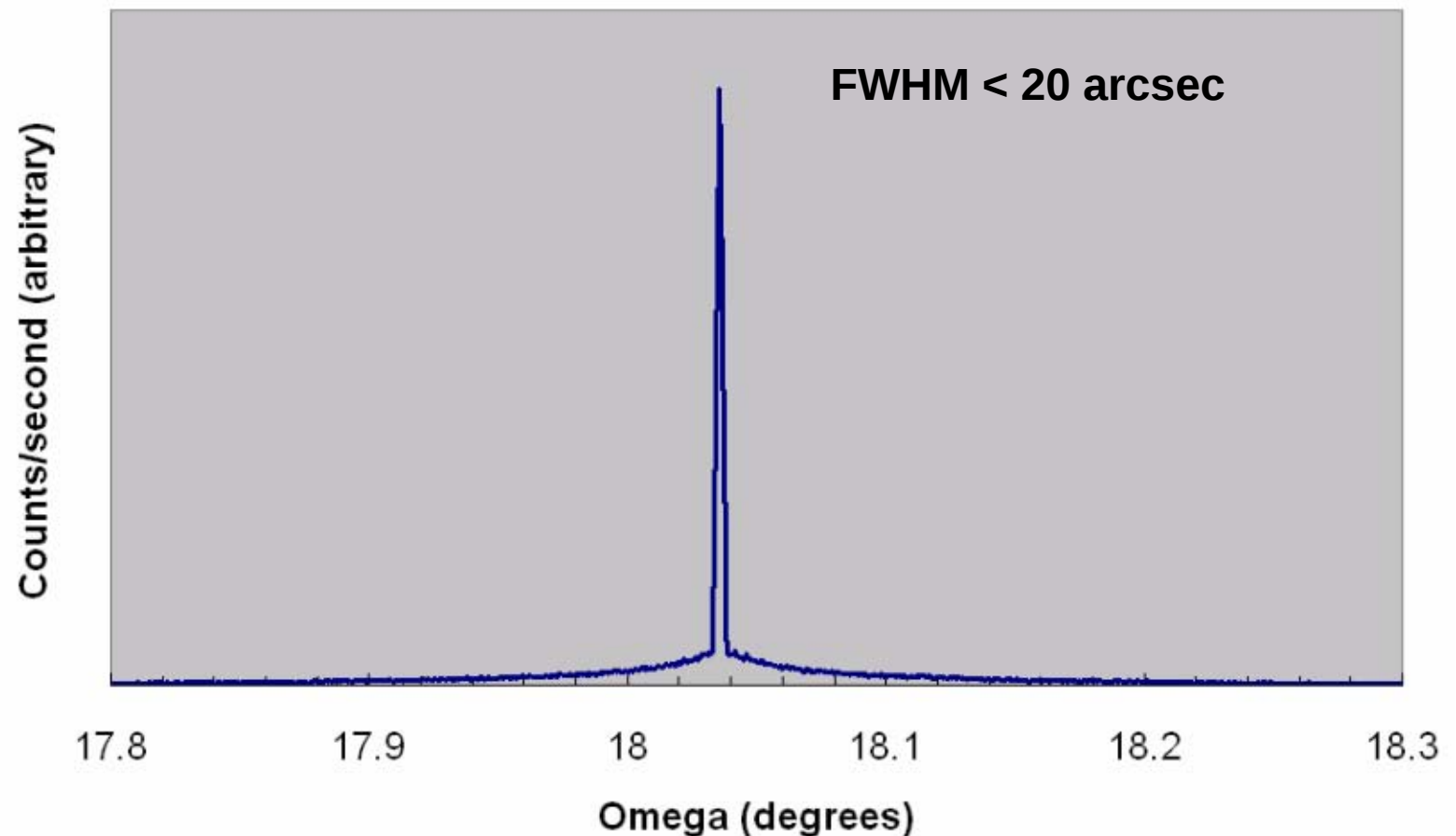
AlN Template Surface - AFM

- 7.8Å RMS Roughness
- Extremely small islands/columns of AlN provide a uniform nucleation surface



AlN on Sapphire Template - XRD

(00.2) Rocking Curve

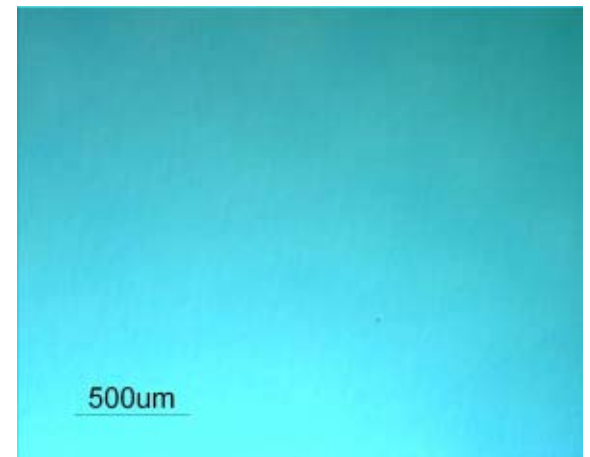
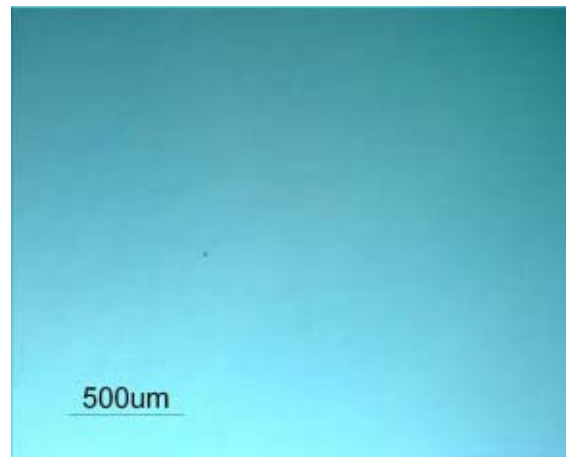


GaN MOCVD Growth Results

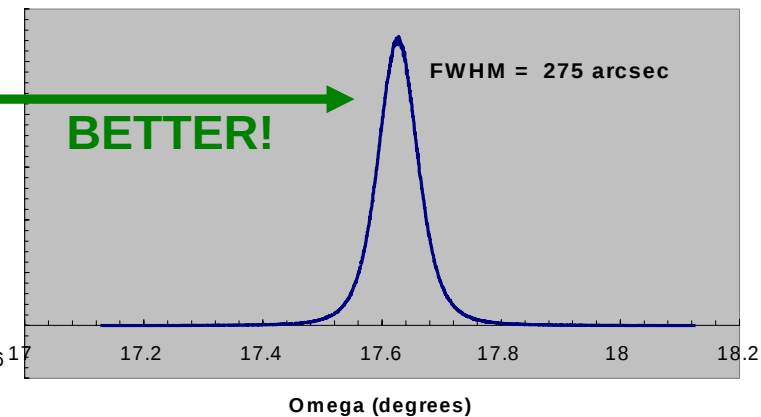
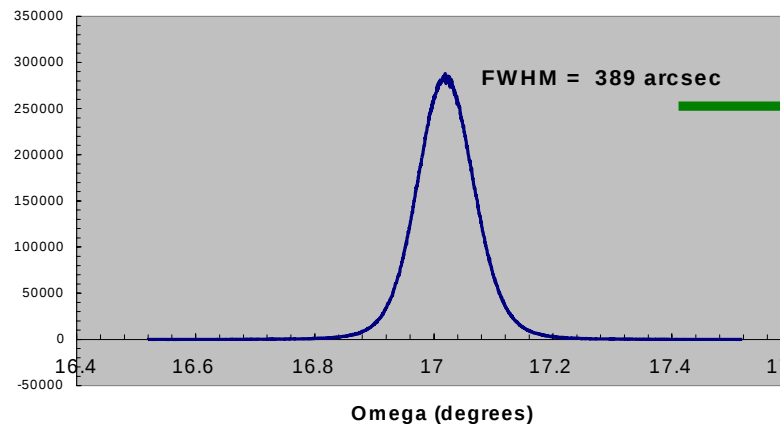
MOCVD Directly on Sapphire

MOCVD on AlN Template

200x Optical
Surface Image



(00.2)
XRD
FWHM



BETTER!

The New Wave in Nitride Semiconductor Materials

GaN Epi on AlN Template - AFM

~1.5 μm GaN layer on AlN Template

- Surface morphology is identical to that of direct nucleation MOCVD GaN on sapphire

