

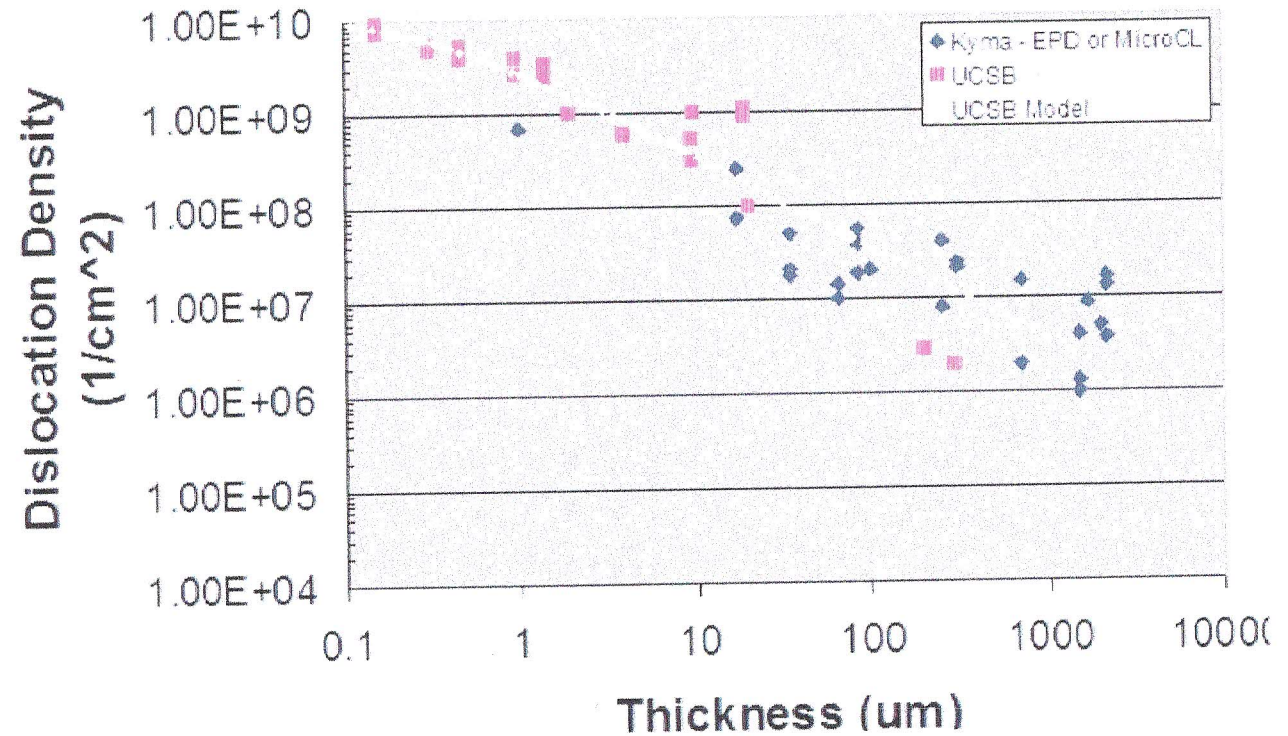


MTI Corporation Inc.
860 South 19th Street #B, Richmond, CA 94804
TEL: 510-525-3070 FAX: 510-525-4705
Website : www.mtixtl.com

Defect Density Trend

Dislocation density drops with increasing GaN thickness

- Undoped 5 μ m GaN
Dislocations
$1 \times 10^9 / \text{cm}^2$
- Undoped 50 μ m GaN
Dislocations
$5 \times 10^8 / \text{cm}^2$
- Undoped 150 μ m GaN
Dislocations
$1 \times 10^8 / \text{cm}^2$

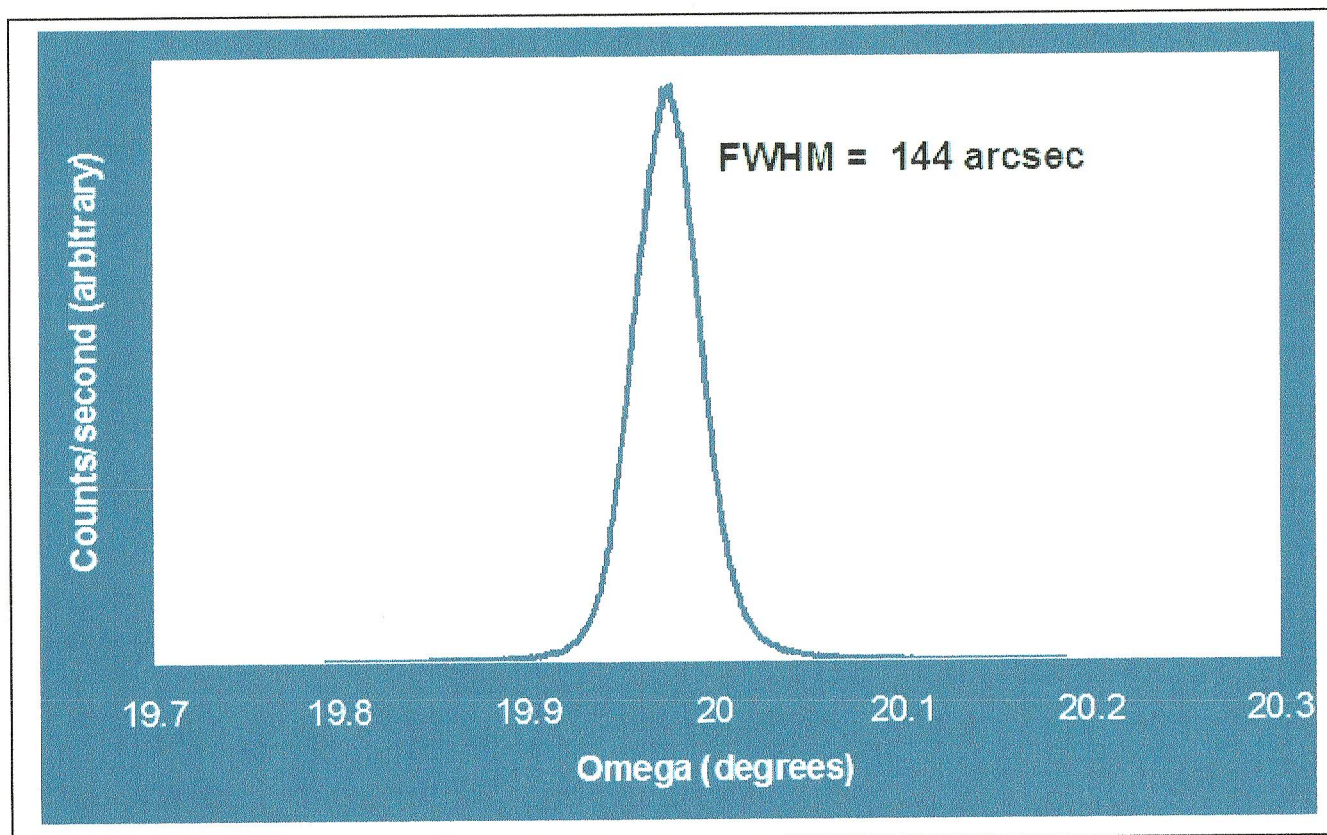




MTI Corporation Inc.
860 South 19th Street #B, Richmond, CA 94804
TEL: 510-525-3070 FAX: 510-525-4705
Website : www.mtixtl.com

High Resolution XRD

(00.2) Rocking Curve of an undoped 50 μ m GaN template

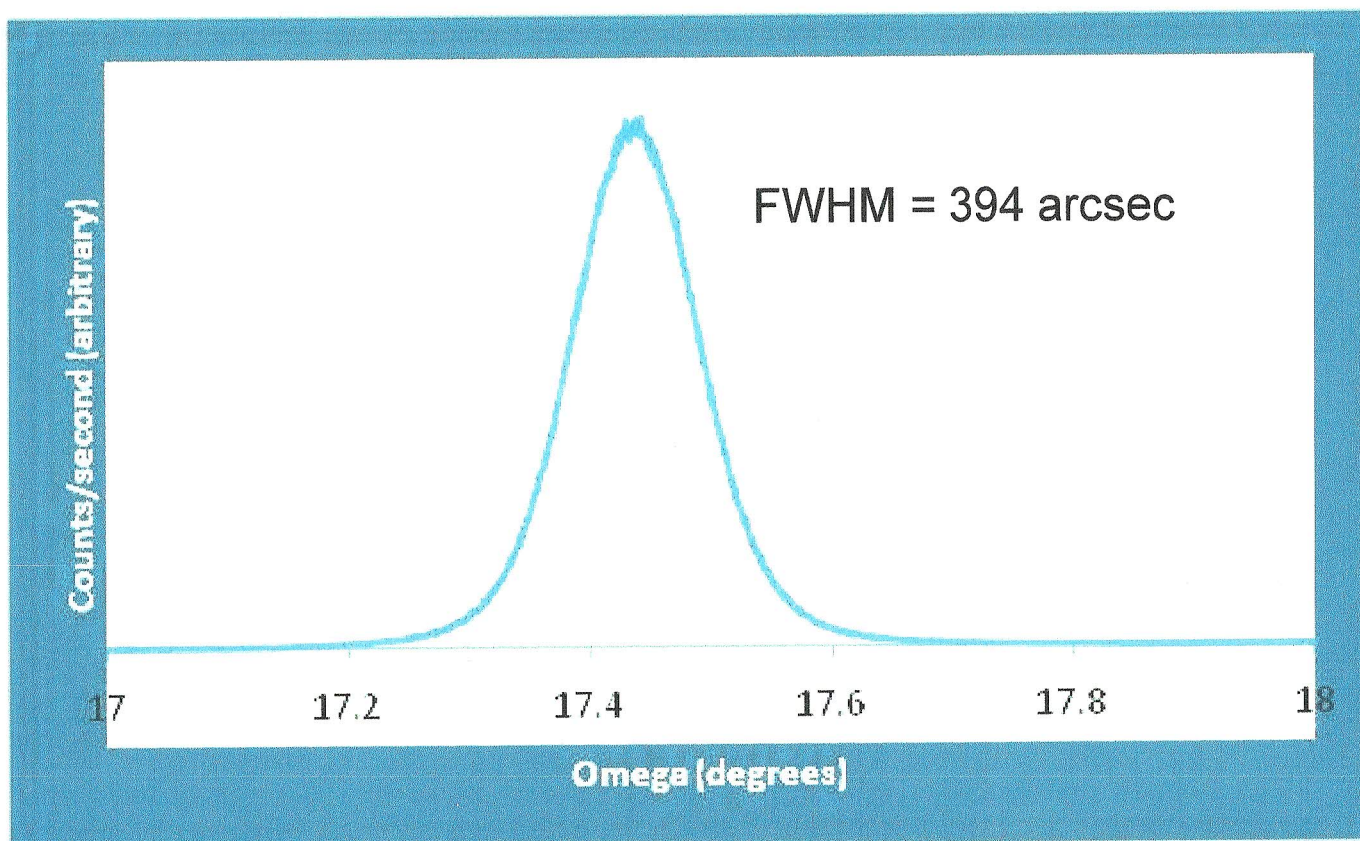




MTI Corporation Inc.
860 South 19th Street #B, Richmond, CA 94804
TEL: 510-525-3070 FAX: 510-525-4705
Website : www.mtixtl.com

High Resolution XRD

(00.2) Rocking Curve of an N+ 5 μ m GaN template

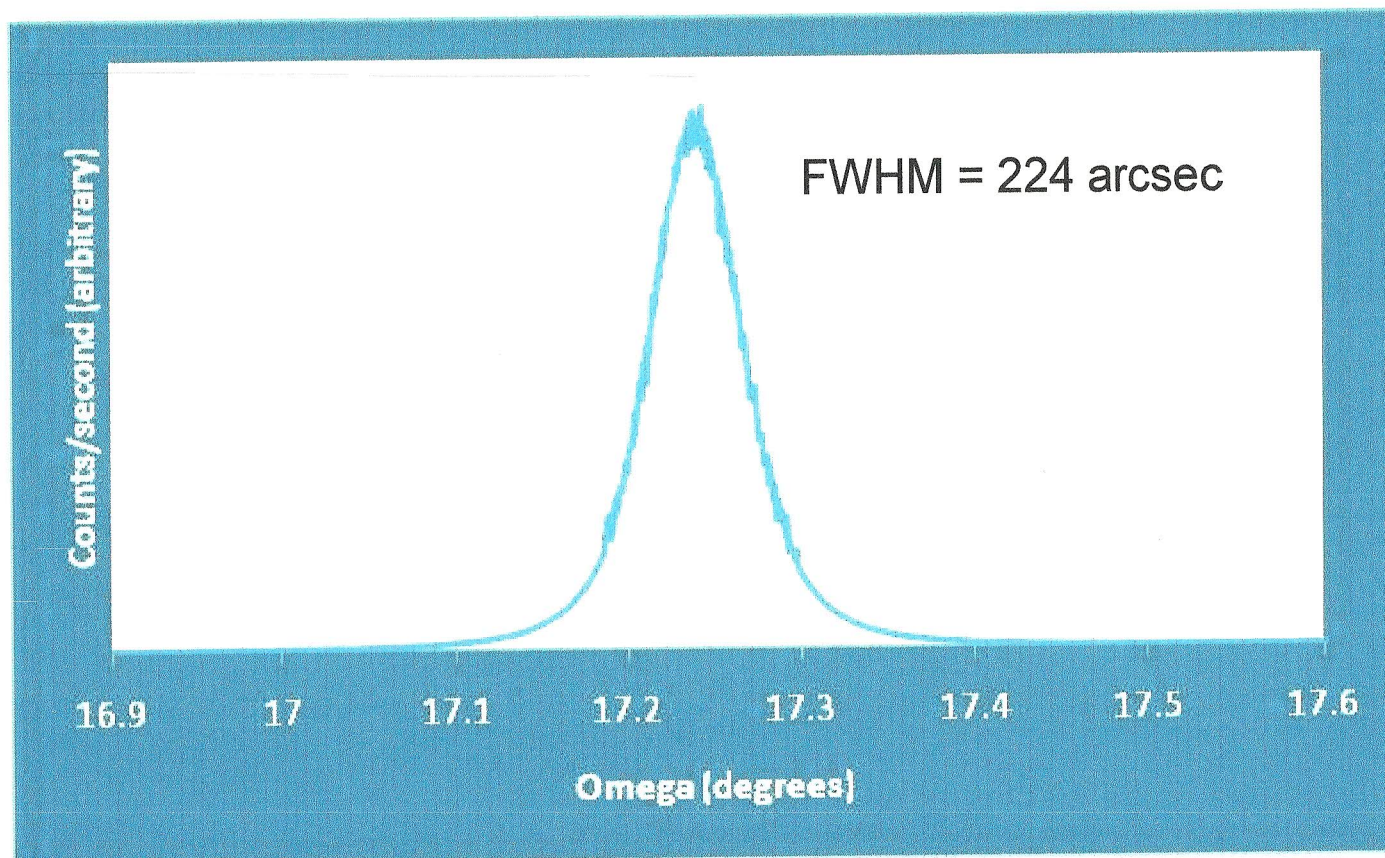




MTI Corporation Inc.
860 South 19th Street #B, Richmond, CA 94804
TEL: 510-525-3070 FAX: 510-525-4705
Website : www.mtixtl.com

High Resolution XRD

(00.2) Rocking Curve of a semi-insulating 5 μ m GaN template

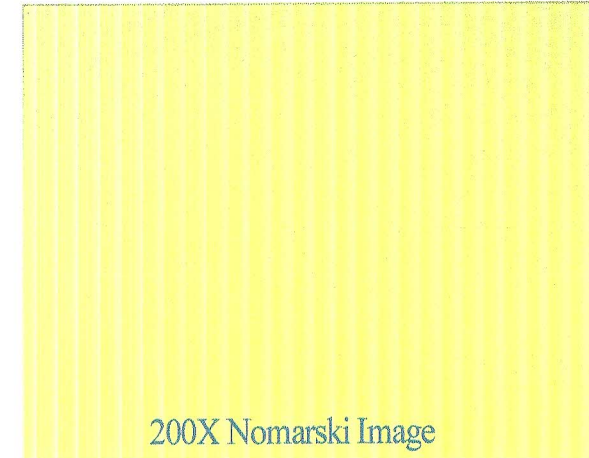




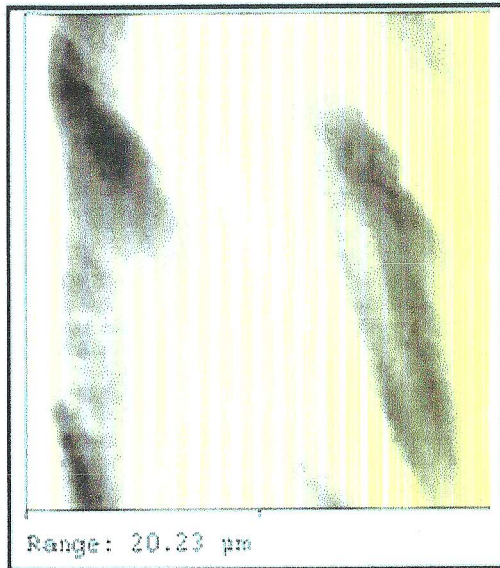
MTI Corporation Inc.
860 South 19th Street #B, Richmond, CA 94804
TEL: 510-525-3070 FAX: 510-525-4705
Website : www.mtixtl.com

Undoped Template Surfaces

- Surface finish is as-grown
 - Nomarski image of undoped 50um GaN film on sapphire shows small surface features
 - AFM image of undoped 50um GaN film on sapphire shows very low surface roughness

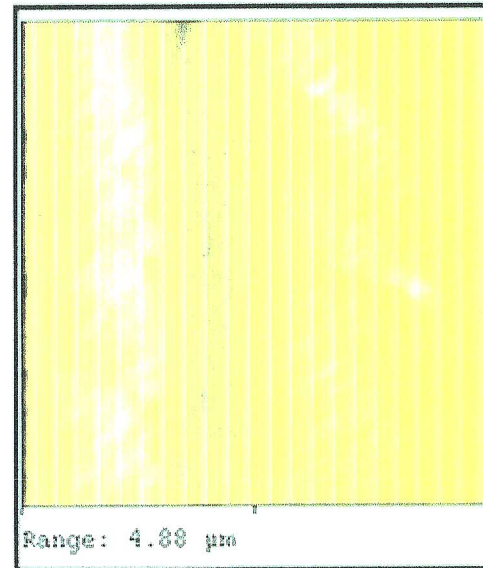


200X Nomarski Image



20x20 μm AFM Image

	Whole Area
Total Area	409 μm ²
R _a	1.05 nm
R _{MS}	1.35 nm
Mean	2.99 nm
Range	8.02 nm



5x5 μm AFM Image

	Whole Area
Total Area	23.85 μm ²
R _a	0.39 nm
R _{MS}	0.52 nm
Mean	2.12 nm
Range	3.47 nm