



***kyma***<sup>®</sup>  
technologies

UVAIN<sup>™</sup>

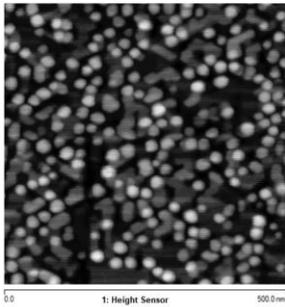


## Kyma's Technology

Kyma UV-AIN templates are grown using a modified plasma vapor deposition nanocolumnar process (PVDNC™) that produces a high quality AlN buffer for subsequent AlN or AlGaIn device epitaxy. Typically utilized in UV- LEDs, the templates are also suitable for use in electronic devices, and for basic research. Kyma UV-AIN templates have several advantages over MOCVD and HVPE grown-templates which include

- Increase in MOCVD throughput by eliminating the sapphire pre-treatment and AlN template layer growth steps
- Lower cost and improved scalability vs MOCVD or HVPE AlN templates
- Superior asymmetric (102) crystalline properties
- Availability up to 150mm diameter on SSP or DSP sapphire

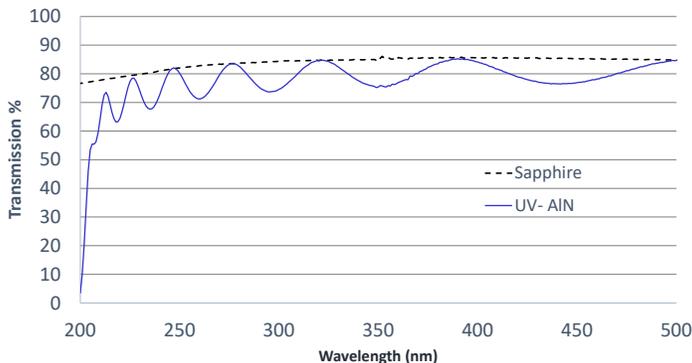
## AFM



- The surface of UV AlN is made of nanocolumns of AlN.
- These nanocolumns allow the epi-grower to employ a wider range of growth temperature and precursor supersaturation for subsequent epilayers

- The RMS of these surfaces is around 1 nm

## Transparency



- UV AlN has almost zero absorption until 200 nm

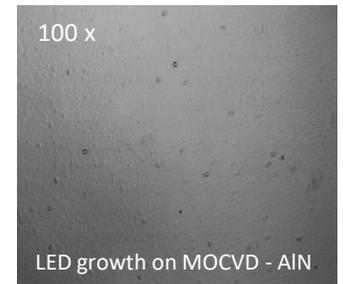
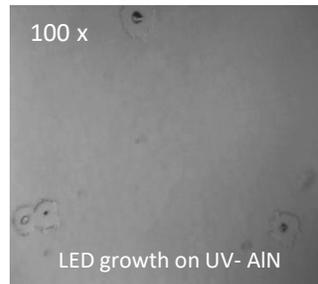
## Sapphire (SSP or DSP)

Wafer Diameter	50 mm, 100 mm, 150 mm
Orientation	c-axis (001) + 0.2°

## AlN

Thickness (standard)	400 nm
	Custom thickness upon request
Crystal Quality (FWHM)	
[002] XRD Linewidth	< 100 arcsec
[102] XRD Linewidth	< 300 arcsec
Exclusions Zone	
50 mm	1 mm
100mm, 150mm	5 mm
Surface Morphology (Al-Face, Epi-ready)	
AFM (R <sub>z</sub> )	1 nm

## Optical Micrographs



- Improved surface flatness and reduction of hillocks on UV AlN compared to baseline MOCVD template

## Testimonials from UV-C LED manufacturers

*"The surface of LED grown on Kyma AlN template is as good as (if not better than) the surface from our standard high power UVC LED grown directly on sapphire."*

*"There is no doubt that UV-AIN can be used to grow high quality high power UVC LEDs."*

For sales and business-related inquiries please contact

[sales@kymatech.com](mailto:sales@kymatech.com)

919-789-8880

8829 Midway West Rd  
Raleigh, NC 27617

[www.kymatech.com](http://www.kymatech.com)