



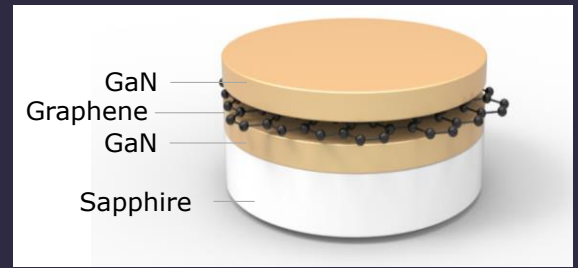
## Future Semiconductor Business

FSB gallium nitride (GaN) templates designed by **Remote Epitaxy and 2 Dimensional Material based Layer Transfer (2DLT)** provide a large area and high-quality single crystalline GaN epi-wafer for solution of high performance power and RF devices.

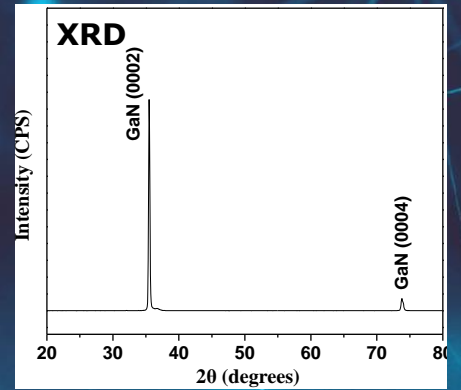
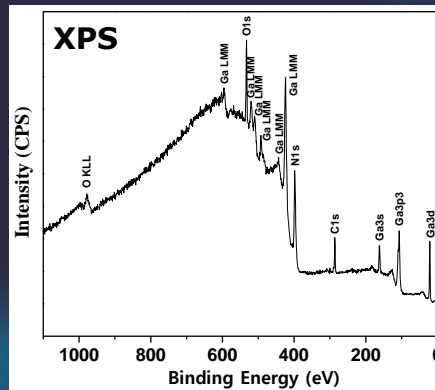
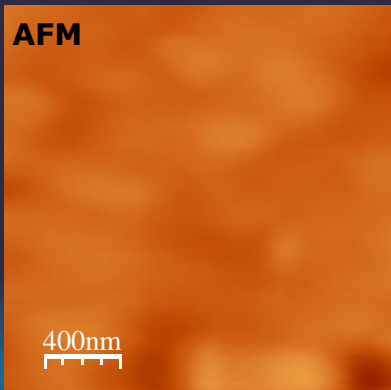
MBE based GaN templates have several merits.

- Large scale and high-quality GaN epi-wafer
- Lift off ready GaN epilayer
- Fast layer release (~ 1 sec) by 2D materials

## GaN on 2D Template



2 inch GaN on graphene template



Conduction Type	N type (Undoped)	N type (Si-doped)	P-type	Semi-insulating
Template Structure	GaN / 2D (Graphene or h-BN) / GaN on Sapphire or Silicon			
Orientation	c-axis (00.1) ± 1.0°	c-axis (00.1) ± 1.0°	c-axis (00.1) ± 1.0°	c-axis (00.1) ± 1.0°
Available Sizes	2" to 4"	2" to 4"	2" to 4"	2" to 4"
Useable Surface Area	≥ 90 %	≥ 90 %	≥ 90 %	≥ 90 %
Surface Finish	< 0.6 nm RMS	< 0.6 nm RMS	< 0.6 nm RMS	< 0.6 nm RMS

*Other thickness and size options available upon request*