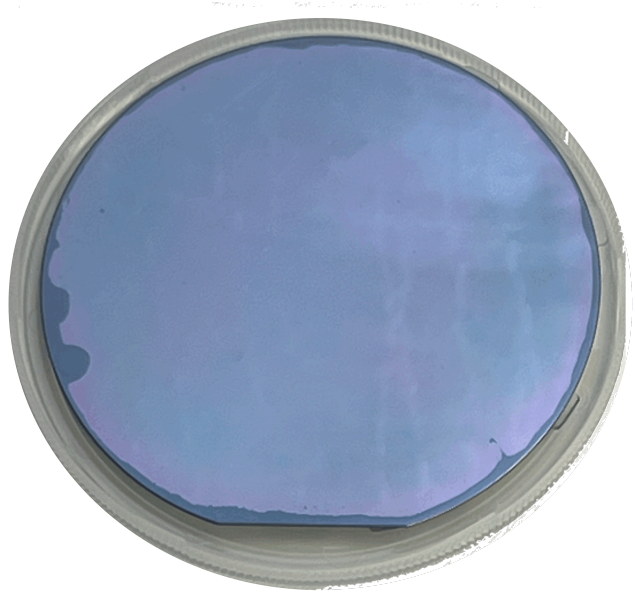
PARTOW TECHNOLOGIES LLC

ION SLICED THIN FILMS

Partow's technology is based on crystal ion slicing of lithium niobate wafers. The process uses ion implantation to weaken the crystal bondage in a lithium niobate wafer. The implanted crystal is then bonded to a handle substrate and a thin layer of lithium niobate is transferred to the handle substrates using crystal ion slicing technique. A final chemical-mechanical polishing step smoothens the surface of the bonded thin film wafer. Currently, the company produces customized photonic thin film platforms using its thin film bonding system and can extend its process to provide more customized bonded platforms based on customer's needs and application.



Smart cut thin film lithium niobate on silicon product specification

Part Number	LN-X-600-2000-100-100	LN-X-xxx-xxx-xx-100
Description	X-cut lithium niobate single crystal on silicon dioxide on silicon	
Top lithium niobate layer		
Parameter	Standard	Custom Order
Orientation	X-cut	X-cut, Y-cut or Z-cut
Primary Flat (on LN film)	+z	TBD
Secondary Flat (on LN film)	-Y	TBD
Lithium Niobate Film Diameter	100 mm	None
Thickness	600 nm	300 – 1,000 nm
Thickness Uniformity	< 2%	< 1%
Surface Roughness	< 1 nm	< 1 nm
Defective Area >100micron	< 5%	< 5%
Defective Area <100micron	< 1 per inch2	< 1 per inch2
Intermediate SiO2 layer		
Parameter	Standard	Custom Order

Part Number	LN-X-600-2000-100-100	LN-X-xxx-xxx-xx-100
Thickness Range	2,000 nm	0 nm – 6,000 nm
Thickness Uniformity	< 3%	< 3%
	Silicon Substrate	
Parameter	Standard	Custom Order
Substrate Thickness	0.5 mm	0.5 – 1 mm
Substrate Diameter	100 mm	100
Substrate Resistivity	> 5000 ohm-cm	0 – 20,000 ohm-cm