$NdGaO_3$

Neodymium Gallate ($NdGaO_3$)Crystal Substrate

DESCRIPTION

$NdGaO_3$ crystal is a new single-crystal substrate material developed in recent years. $NdGaO_3$ (110) substrates are mainly used for high-temperature superconductors (YBCO) and magnetic epitaxial films growth, because $NdGaO_3$ and YBCO have small lattice mismatch (~0.27%), and no structural phase change at the crystal interface. The (011) plane is also attracting attention as an epitaxial substrate for GaN because its lattice length and symmetry are similar to those of GaN (0001).

FEATURE

- NdGaO3 and high-temperature superconductors (YBCO) have small lattice mismatch (~0.27%), and no structural phase change at the crystal interface
- Its lattice length and symmetry are similar to those of GaN (0001)

APPLICATION

- An epitaxial substrate for GaN
- An epitaxial substrate for high-temperature superconductors (YBCO)
- An epitaxial substrate for ferroelectrics
- An substrate for magnetic epitaxial films

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PARAMETER

Physical Properties

Composition	$NdGaO_3$
Crystal system	Orthorhombic
Crystal structure	Perovskite
Lattice constant	a=0.5431nm, b=0.5499nm, c=0.7710nm
Melting point	1650°C
Density	7.56 g/cm^3
Crystal growth method	CZ method
Dielectric constant	20～25 (2°C, 1MHz)
Thermal expansion coefficient	$10\times10^{-6}/K$

Main Specification

Size	5x5 mm, 10x10 mm, customized sizes are available upon request
Thickness	0.5mm, 1.0mm
Polishing	Single or double side polished
Crystal orientation	(001), (100), (110), (011)
Orientation precision	+/-0.5°
Surface Roughness Ra:	< 0.5 nm (5μm x 5μm area)
Package	Sealed in a class 100 clean bag packed in class 1000 clean room