Introduction of NTK & products

Feb. 6th, 2026

Niterra North America, Inc. (NTK CERATEC)

NTK CERATEC

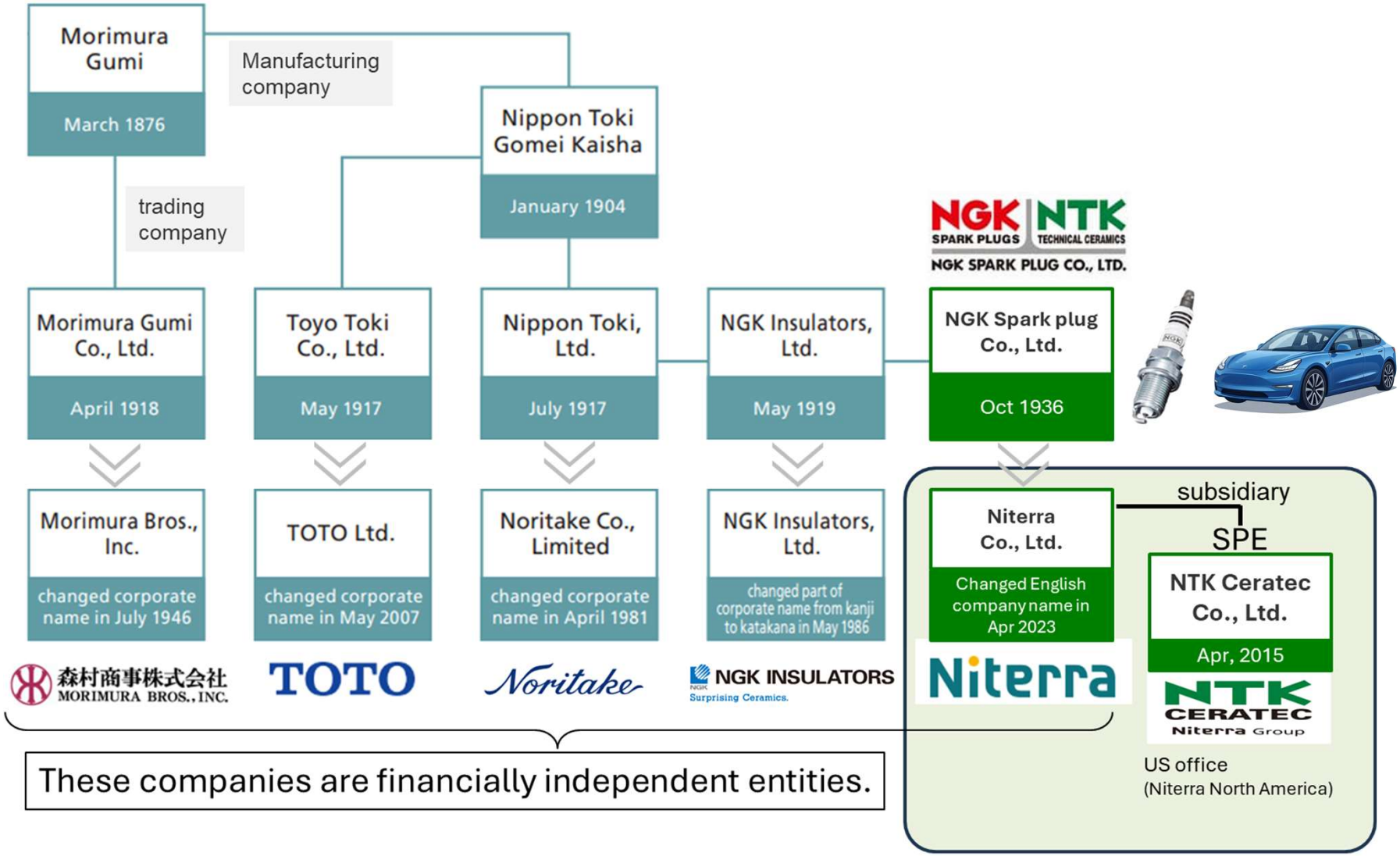
Challenge the next generation with ceramics!

Contents

- ✓ Company profile
- ✓ Company highlights
- ✓ Key products

Company profile

Corporate History



Niterra Group

2023～
Niterra
～2022
NGK SPARK PLUGS | NTK TECHNICAL CERAMICS
NGK SPARK PLUG CO., LTD.

Plugs

Spark Plugs, Glow Plugs

Sensors

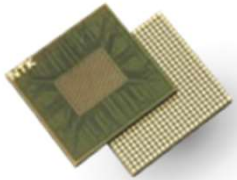
Oxygen Sensors,
Knock Sensors

SPE

NTK CERATEC
Niterra Group

Susceptors (ESC/Heater),
Structural ceramic,
Coating

Packages



IC packages
LED packages

Medical

Oxygen Concentrators

Company overview of NTK CERATEC

Establishment : 1987s
HQ ： Sendai city, Miyagi, Japan

797 (as of Apr 1st, 2025)

JPY 34,600M (March 2024) ≒ $234M
($1.00 = JPY147.00)

ISO9001 & ISO14001

Komaki factory

Sendai 1st ~3rd factories

YEEDEX CERATEC Corp. (Taiwan)

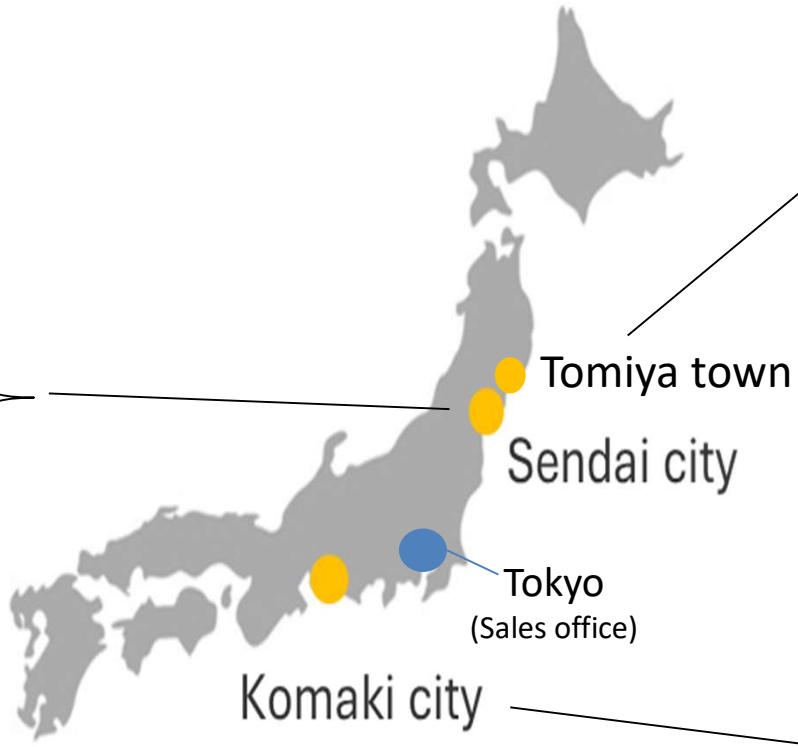
Tokyo sales office
Niterra North America, Inc. (USA)

Location Japan

Headquarters Sendai

Sendai Fab1

Sendai Fab2



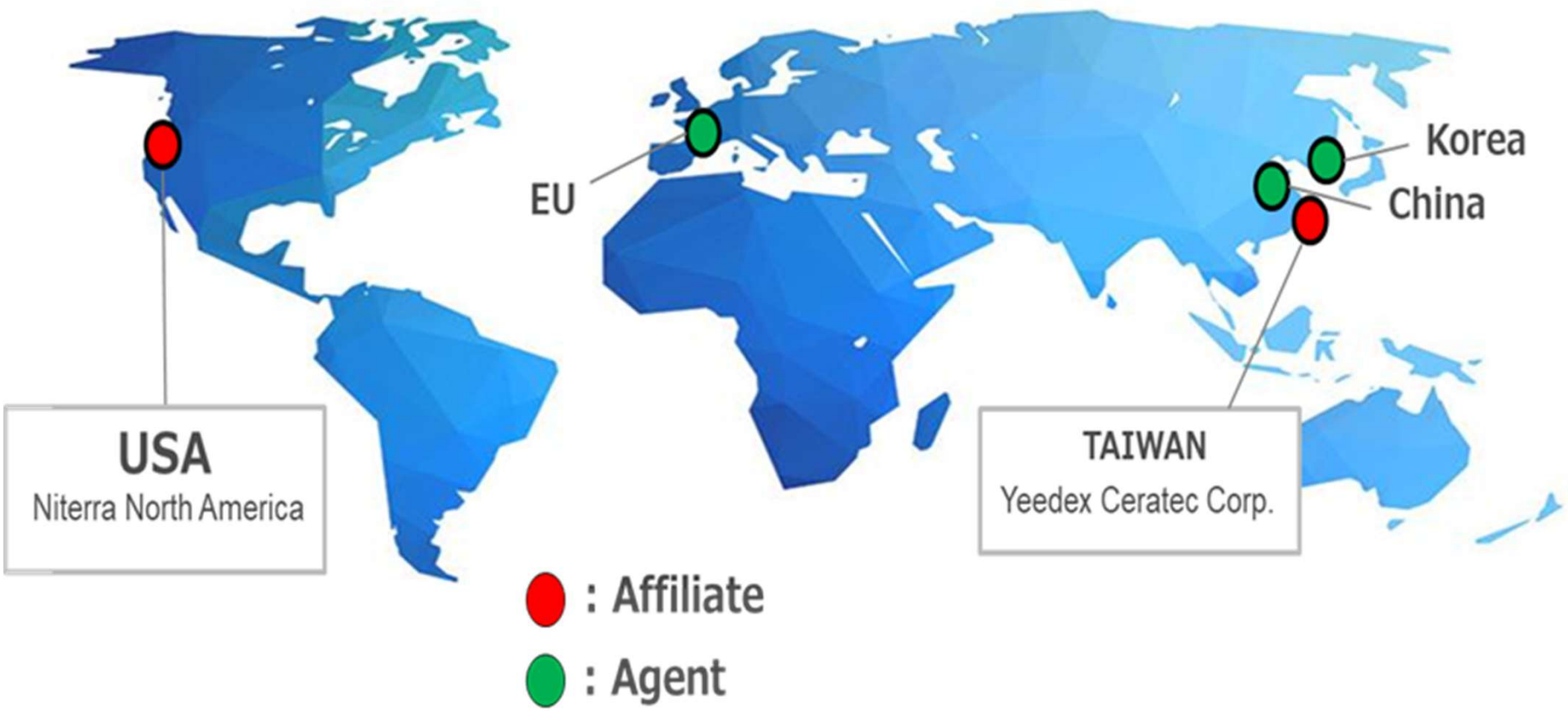
2026～

Tomiya new factory
(Under construction)

Komaki Fab
2024～

Confidential

Location Oversea



Company Highlights

- ✓End-to-End Manufacturing
- ✓Innovative Material R&D
- ✓Semiconductor-Centric Business

End to End manufacturing

From raw material mixing to shipping in-house.

Raw materials → Molding → Sintering → Machining → Inspection → Cleaning → Shipping



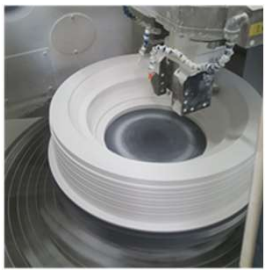










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Material line up - General

NTK has a wide range of materials for various needs

Al_2O_3 (Alumina): The most popular materials for fine ceramics, with relatively low manufacturing costs.

ZrO_2 (Zirconia): The highest mechanical strength and toughness

SiC (Silicon Carbide): High Strength in high temp, High thermal conductance, Corrosion resistance

Si_3N_4 (Silicon Nitride): Low thermal expansion
High temp toughness
High thermal shock resistance

AlN (Aluminum Nitride): High Thermal Conductivity, Heater material

INNOVATIVE MATERIAL R&D – *unique* materials

Low Dielectric Loss Alumina: Used for Semiconductor equipment

Thermal Shock resistance alumina:
High toughness, Used for components around heater, etc

High Purity Pore Free alumina: Purity 99.99%, Plasma resistance
Low Dielectric Loss

Zero thermal expansion Pore Free ceramics (ZPF):
Pore Free, High stiffness

Low thermal expansion insulating ceramics Adceram-CS®:
Low thermal expansion, High thermal shock resistance ,Low heat conductivity

Machinable ceramics Macor®:
Processed easily, Manufactured faster, Heat resistance/insulating

Characteristics - NTK's General & *unique* materials

⇨ Unique (NTK Original)

Material		Characteristics	Coefficient of thermal expansion	Thermal shock resistance	Coefficient of thermal conductivity	Electrical resistance	Dielectric strength	Dielectric constant	Dielectric loss
			×10^{-6}/K	K	W/m・K	Ω・cm	kV/mm		×10^{-4}
Alumina（Al2O3）	Standard product	A995	7.3	200	30	>10^{14}	12	10	<300
⇨ Alumina（Al2O3）	Low-dielectric loss type	A995LD	7.5	200	30	>10^{14}	12	10	<5
⇨ Alumina（Al2O3）	Thermal shock residence type	A995S	7.1	500	30	>10^{14}	-	10	<300
Zirconia（ZrO2）	Standard product	AYZ-3	10	280	3	10^{12}	>10	35	20
Silicon carbide（SiC）	Standard product	N-Type	4.6	450	170	10^{6}	-	-	-
Silicon nitride（Si3N4）	Standard product	ASN-5	2.3	700	26	>10^{14}	>10	8	3
Aluminum nitride(AlN)	Standard product	N-Type	4	400	160	10^{14}	>15	9	10
⇨ Zero thermal expansion Pore Free ceramics	ZPF	N-Type	-	-	5	10^{12}	-	-	-
⇨ Low thermal expansion insulating ceramics	Adceram-CS®	D3	0.9	700	1.3	10^{10}	20	7.5	35
Machinable ceramics Macor®	Macor®	-	9.3	150	1.7	10^{16}	40	6	50

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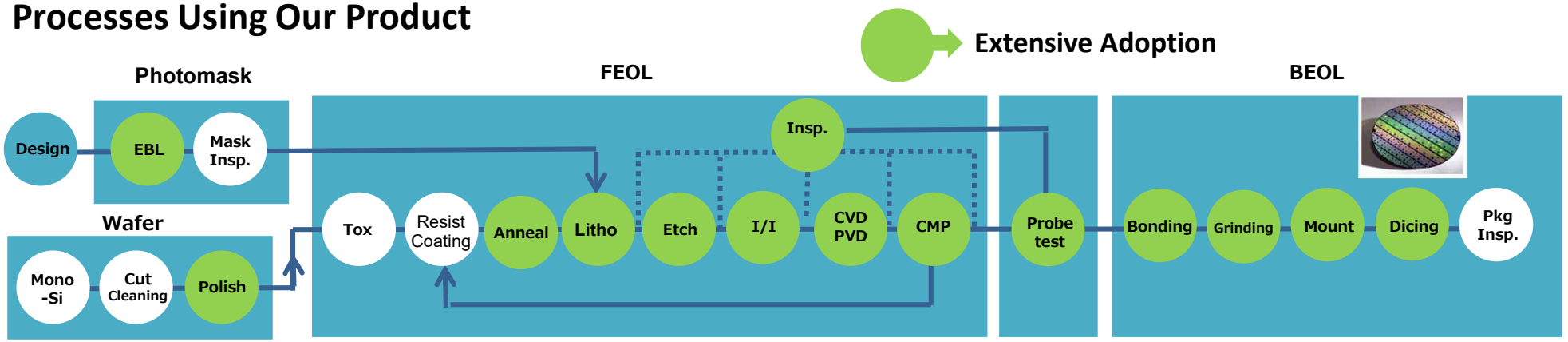
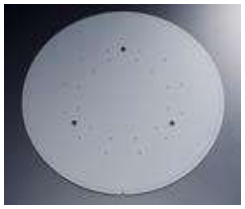
Usage of our products in semiconductor processes

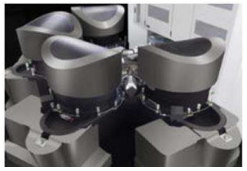
Processes Using Our Product



Application example


Lith tool

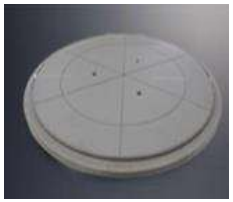

Wafer table


Etcher


CVD

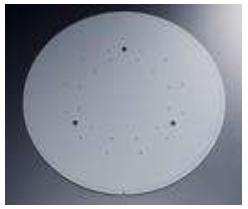

Sputtering


Spray coating


ESC


Inspection


Grinder/Mounter/Dicer


Wafer table


Porous Chuck

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Cleaning & Analysis system for Semiconductor

Measurement

Laser interferometer (Zygo)

Non contact surface roughness meter

Non contact 3D optical Profilometer

Cleaning and Analysis

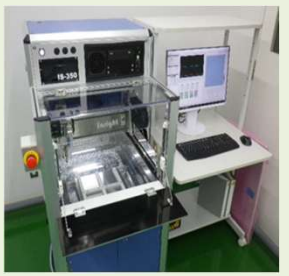
In house cleaning

Liquid particle counter

Particle counter

ICP-MS

C-SAM



Market trend

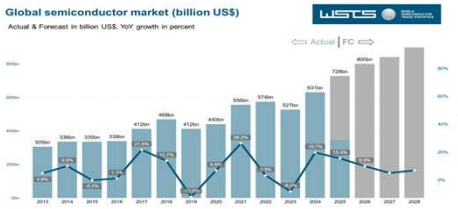
Dec 2025 FCT

Global semiconductor market (billion US$)

Actual & Forecast in billion US$, YoY growth in percent

WSTS WORLD SEMICONDUCTOR TRADE STATISTICS

Jun 2024 FCT



Source: WSTS website

AI

2026～

Tomiya new factory
(Under construction)

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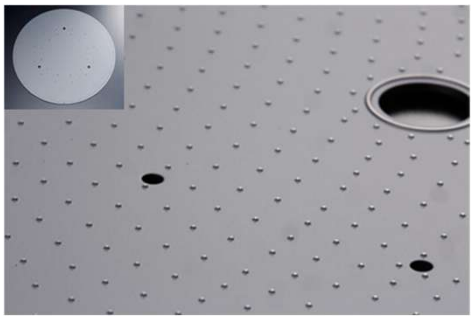
Key products

✓ High-Performance Vacuum

Ultra-Precision Wafer table

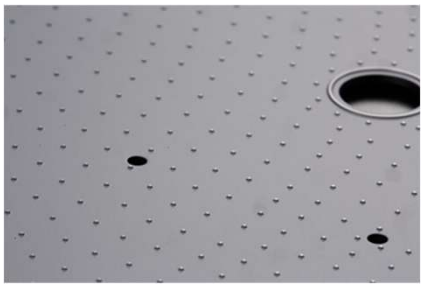


Adhesive-free porous wafer table

Advanced Electrostatic Chucks (ESC)

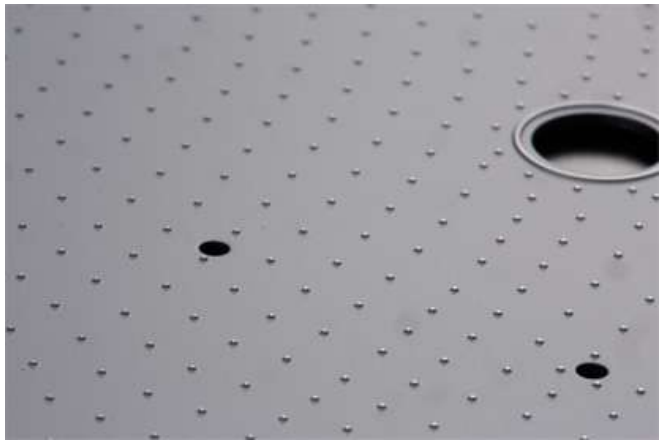
Design-Flexible Multilayer ESC

Ultra-Precision Wafer table

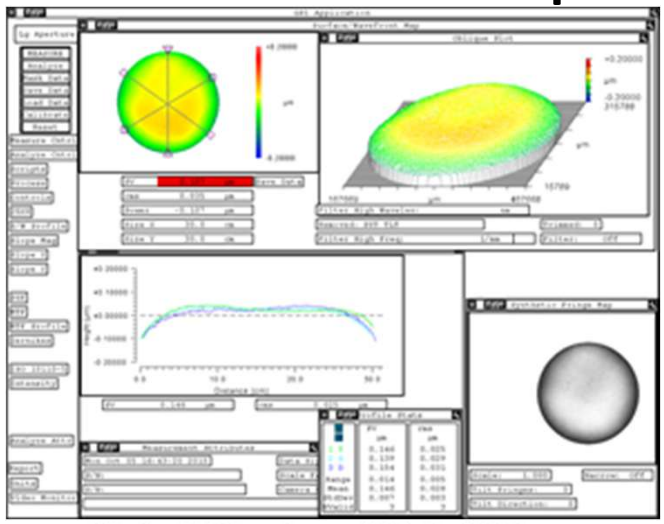


Process	Requirement	NCC Technology
Lithography	High precision	・Ultimate flatness ・Surface shape control
	Warpage wafer	・Warped wafer chucking
Wafer inspection	Low particle	・Pin bottom polishing ・Small diameter pin
Wafer bonding	Temp uniformity	・Hollow structure
	High cleanliness	・Cleaning and Analysis

Ultra-Precision Wafer table　Ultimate flatness



Global Flatness ≦0.3μm



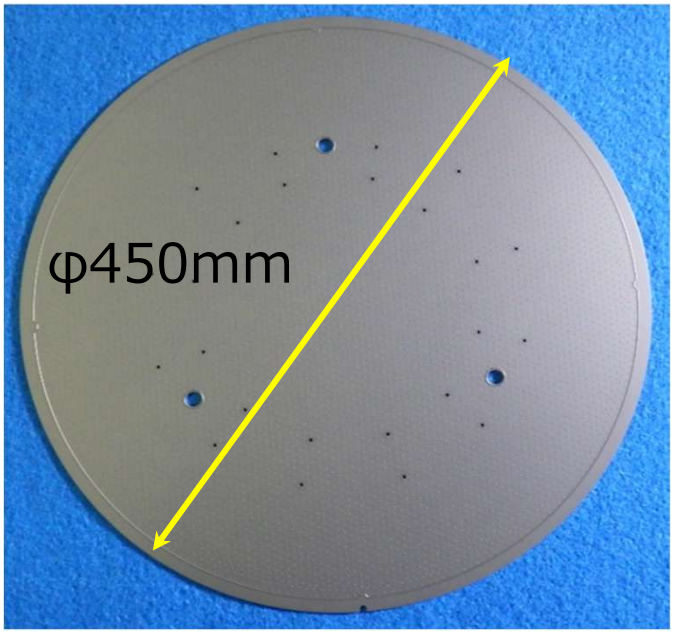
Global Flantess PV 0.187μm

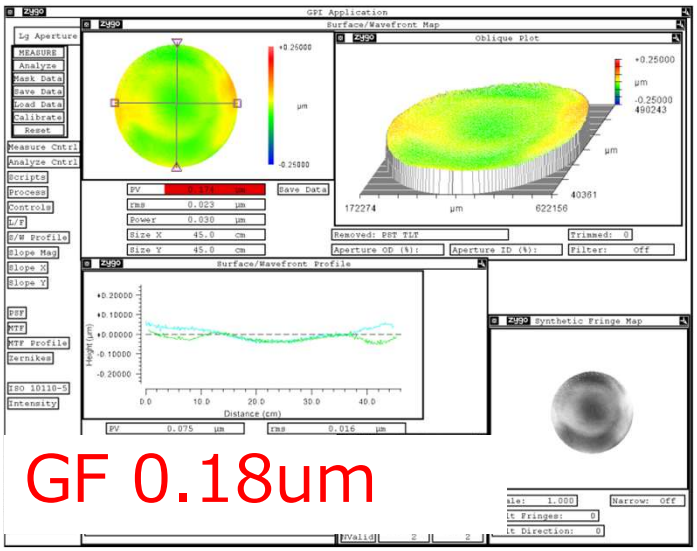
Local Flatness ≦0.05μm

				0.009	0.014	0.014	0.026	0.027	0.013	0.012				
		0.008	0.015	0.015	0.008	0.013	0.012	0.015	0.016	0.026	0.018	0.009		
	0.011	0.015	0.023	0.011	0.011	0.015	0.016	0.012	0.011	0.012	0.015	0.014	0.008	
	0.017	0.012	0.012	0.018	0.015	0.016	0.023	0.015	0.011	0.012	0.014	0.014	0.035	
0.01	0.021	0.011	0.013	0.011	0.011	0.012	0.011	0.012	0.013	0.011	0.015	0.012	0.021	0.015
0.012	0.011	0.011	0.012	0.022	0.017	0.014	0.018	0.011	0.016	0.015	0.013	0.011	0.014	0.02
0.017	0.013	0.013	0.009	0.011	0.014	0.016	0.024	0.019	0.013	0.012	0.011	0.016	0.012	0.027
0.024	0.016	0.015	0.009	0.008	0.011	0.016	0.024	0.017	0.013	0.012	0.011	0.013	0.012	0.013
0.015	0.013	0.011	0.011	0.012	0.016	0.013	0.022	0.016	0.013	0.01	0.012	0.014	0.015	0.016
0.016	0.012	0.021	0.016	0.015	0.01	0.016	0.01	0.012	0.012	0.013	0.019	0.013	0.013	0.012
0.016	0.012	0.013	0.026	0.014	0.011	0.009	0.011	0.012	0.031	0.011	0.015	0.012	0.016	0.009
	0.03	0.016	0.017	0.013	0.012	0.009	0.013	0.011	0.012	0.009	0.013	0.015	0.017	
	0.01	0.026	0.023	0.013	0.012	0.012	0.013	0.011	0.011	0.011	0.015	0.025	0.007	
		0.007	0.02	0.019	0.016	0.012	0.012	0.012	0.016	0.016	0.024	0.009		
				0.009	0.027	0.03	0.029	0.037	0.022	0.011				

Local Flatness Ave 0.015μm Max 0.037μm

Ultra-Precision Wafer table　Ultimate flatness

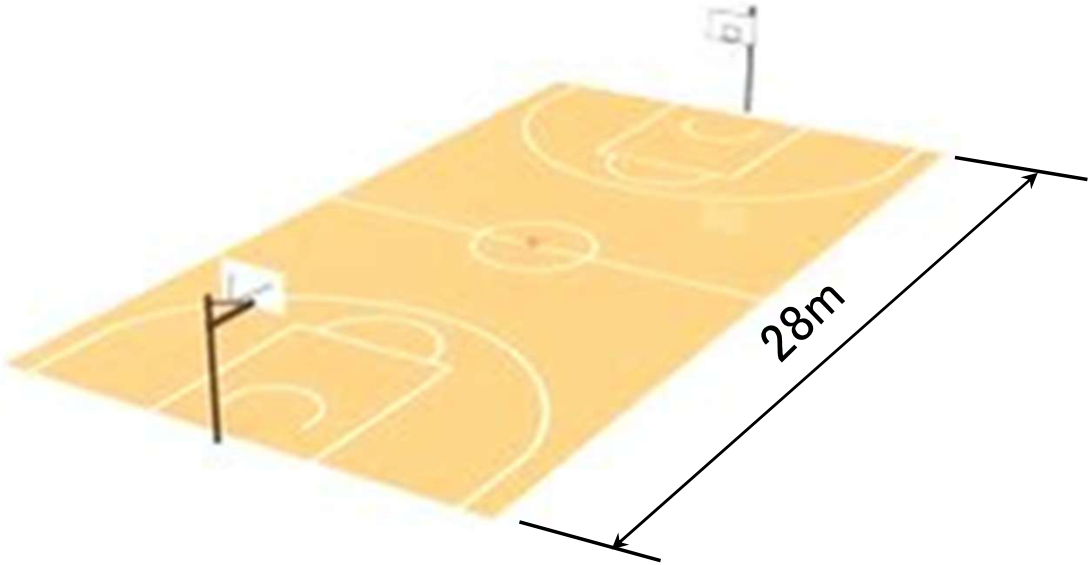




GF 0.18um

Like

Basketball coat…



凸凹0.01mm/28m

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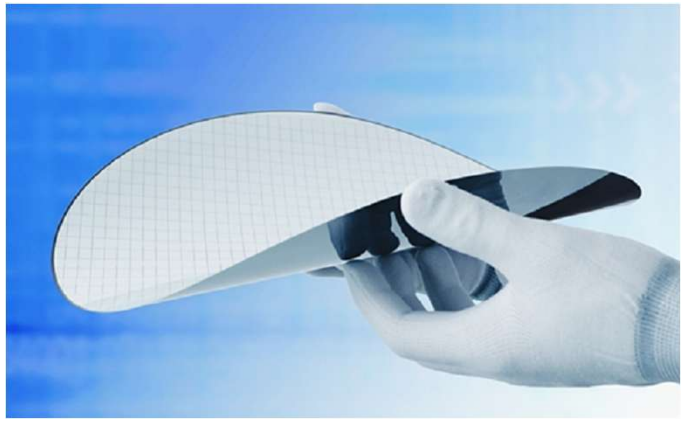
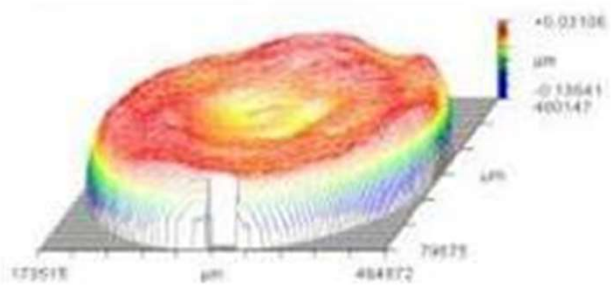
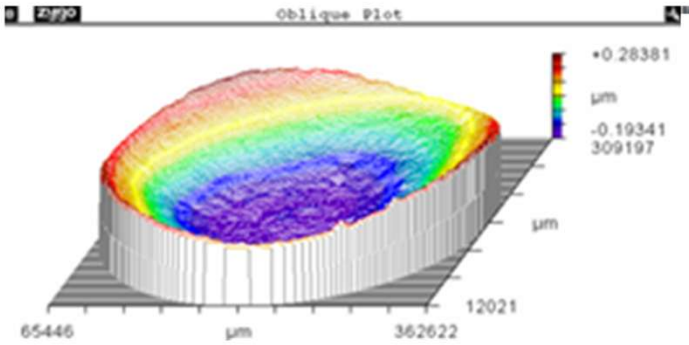
Ultra-Precision Wafer table　Surface shape control

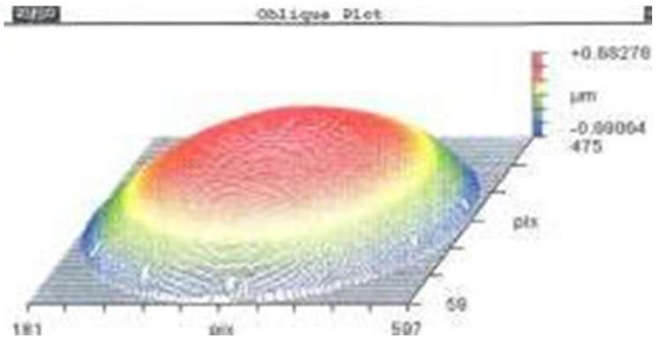




Flat
flatness 0.16um



Concave
flatness 0.48um



Convex
flatness 0.56um

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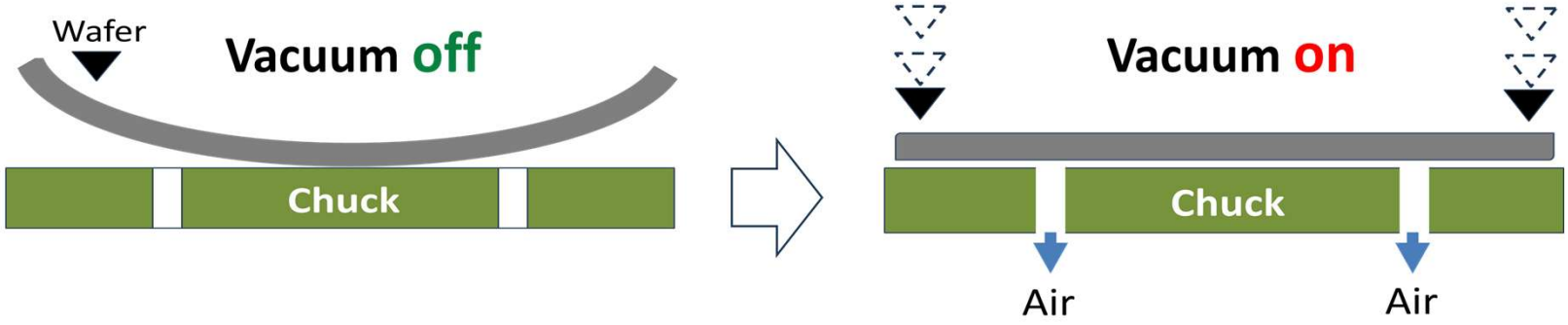
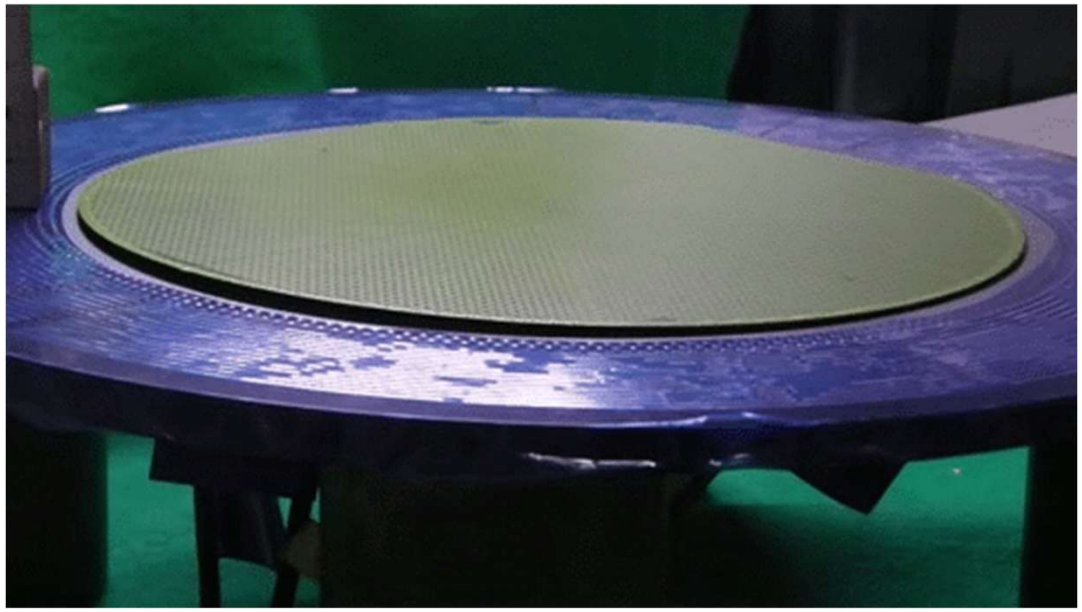
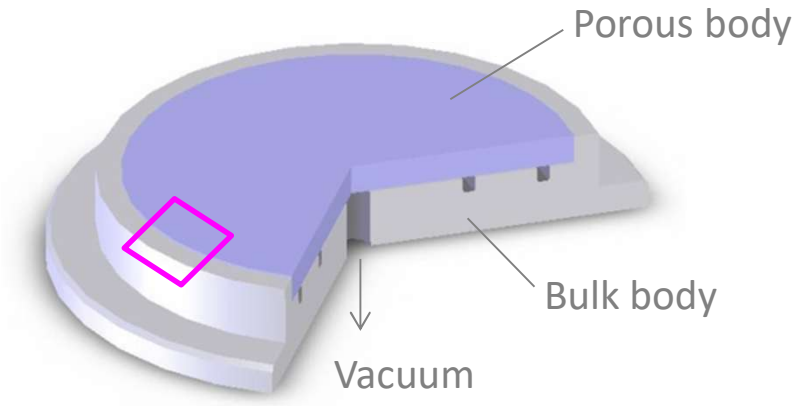
Ultra-Precision Wafer table　Warped wafer chucking





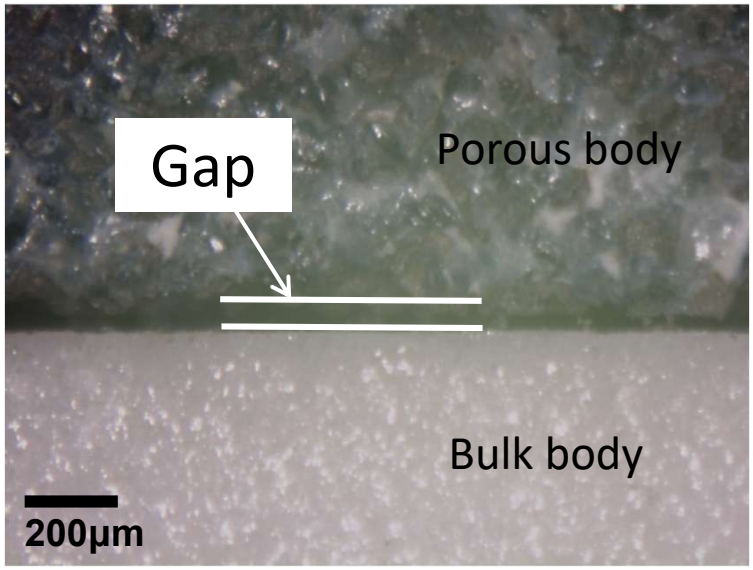
Warpage：3mm

Porous chuck – Adhesive free

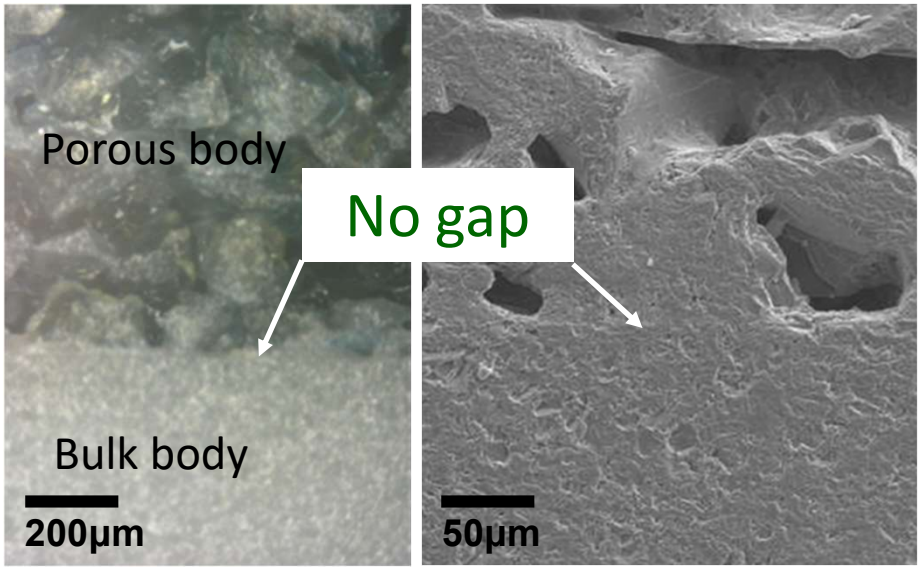


STD SPEC
Pore size ：30μm
Porosity ：35%
Flatness ：5um

Connected by ashesive

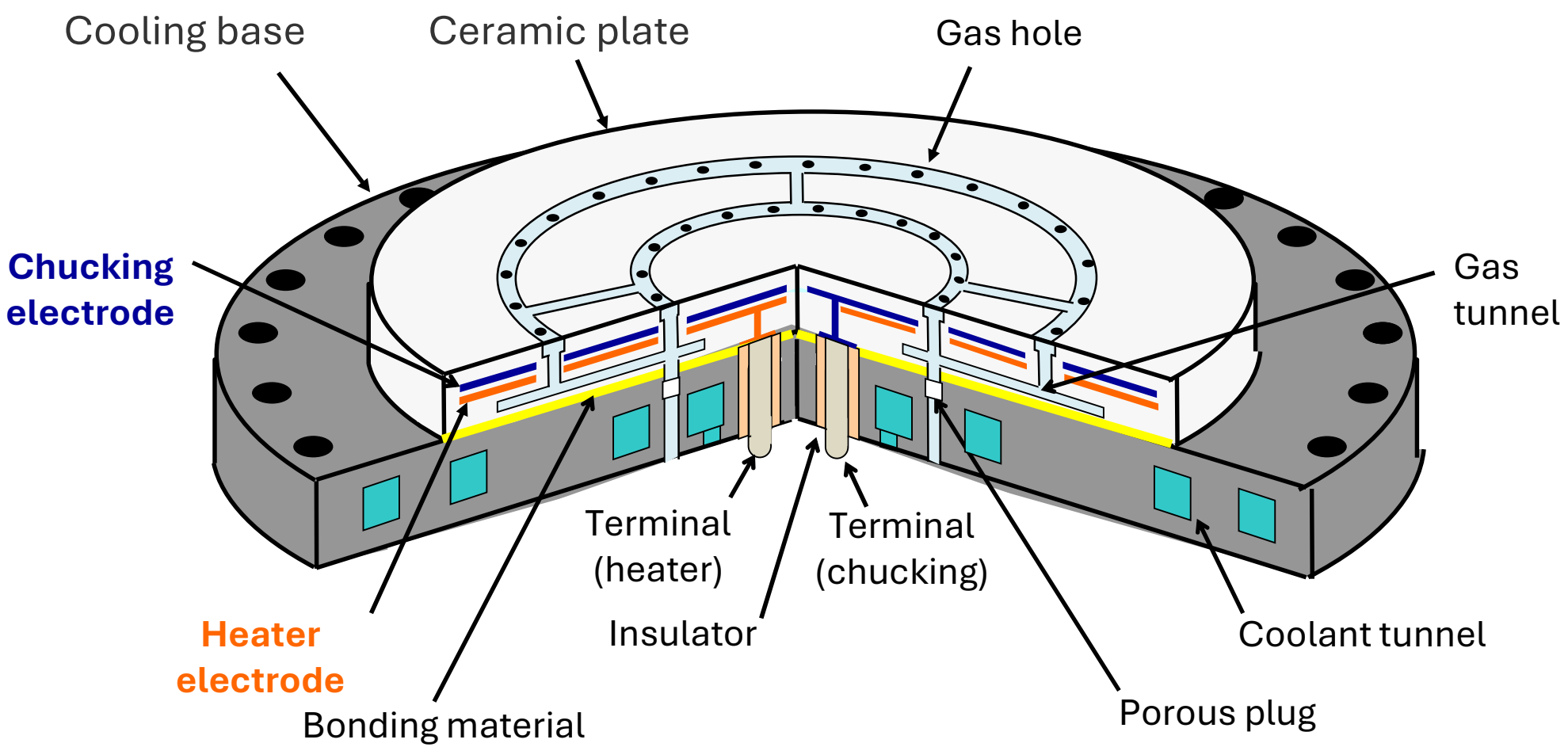


NTK Technology

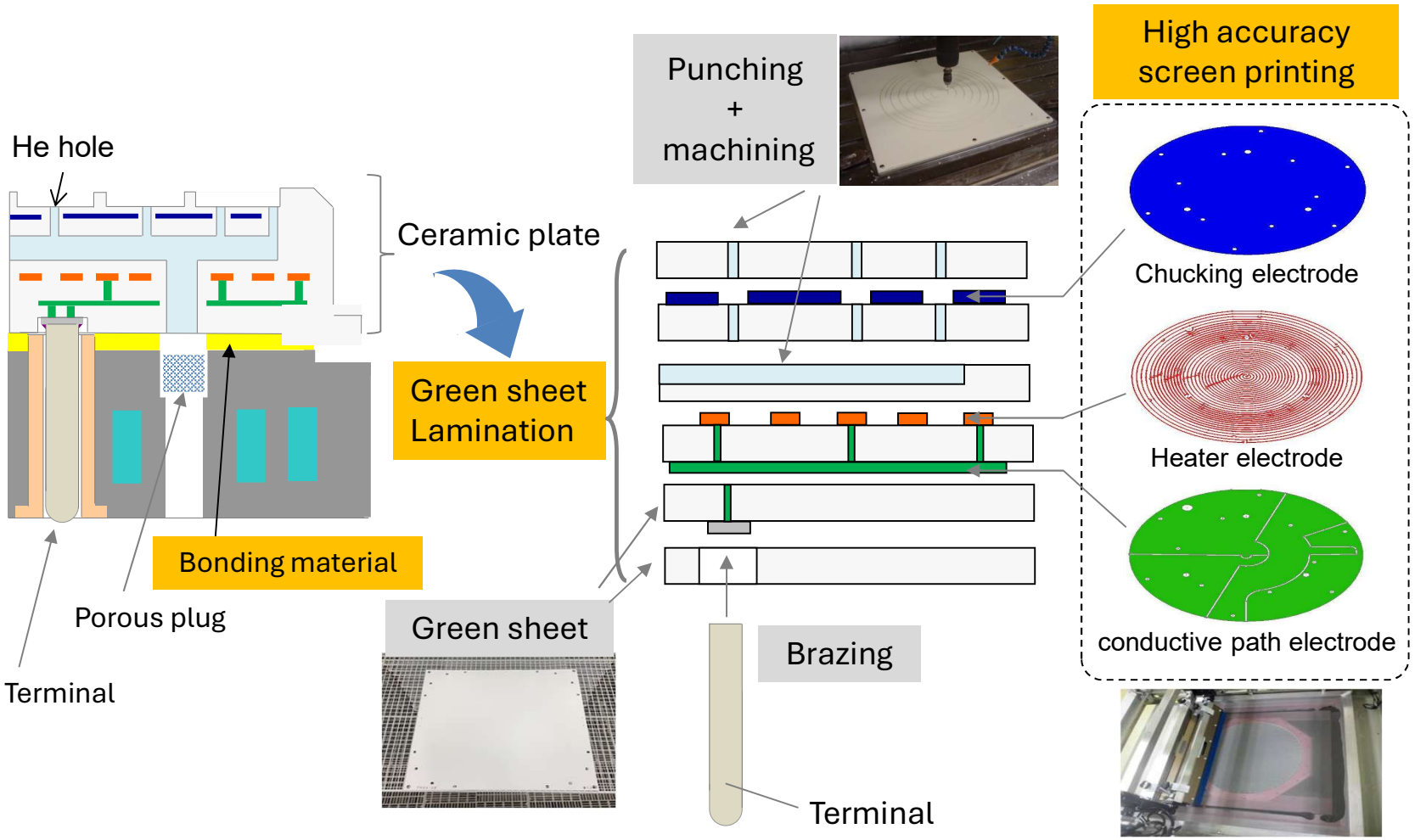


Design-Flexible Multilayer ESC

ESC (Laminated) - Fundamental design



ESC (Laminated) – Manufacturing technology



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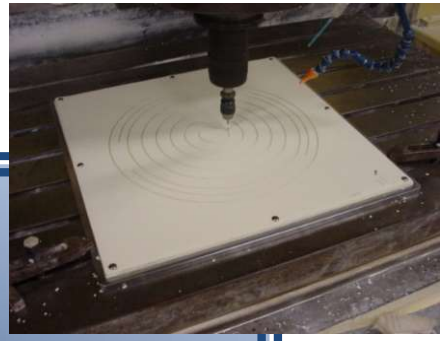
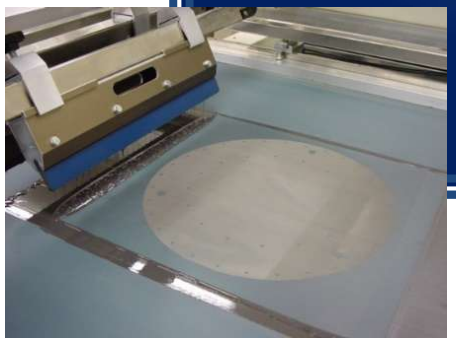
ESC(Laminated) - Strong points

Lamination

Machining



High
Flexibility
In Design



High accuracy
Screen printing

Bonding

Thank you

ありがとうございました。