BNSR
BINE SYSTEMS & RESEARCH

Sensor on Wafer

Capella Series [T/C/P]

Sensor wafer system for semiconductor process diagnosis

Product Series

Code NO.	Model	Temp range (℃)	Plasma	Description	Naming
A	LT-300	20~140	None	Low Temp	Customer Use Temp
B	LTP-300	20~140	Apply	Low Temp	
C	CY-300	-40~140	None	Cryonenic Temp	
D	CYP-300	-40~140	Apply	Cryonenic Temp	
E	HT-300	20~160	None	High Temp	
F	HTP-300	20~160	Apply	High Temp	

300mm Etcher

Product necessity

It is an important product for securing price competitiveness in semiconductors and developing cutting-edge technologies for future semiconductors by periodically monitoring the status of process equipment, converting it into big data, and optimizing equipment inspection costs through deep learning.

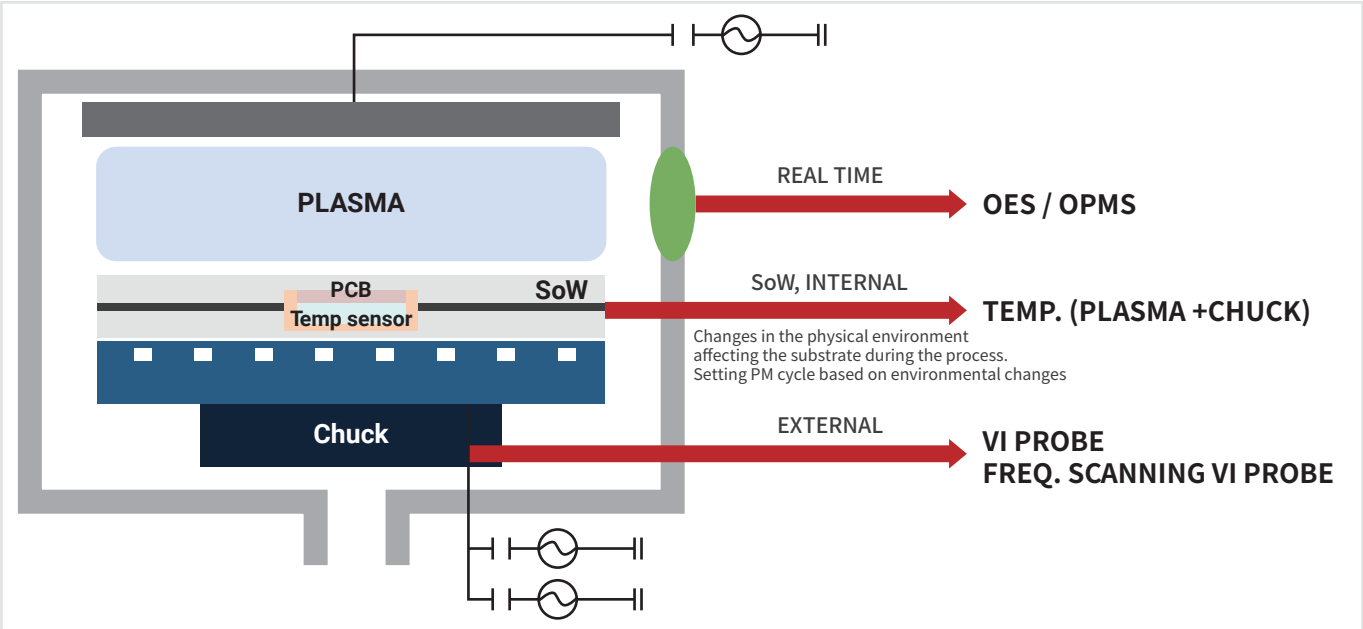
- Check chamber status diagnosis using SoW
- Equipment maintenance optimization

- **Increase semiconductor output**
- **Strengthen price competitiveness**

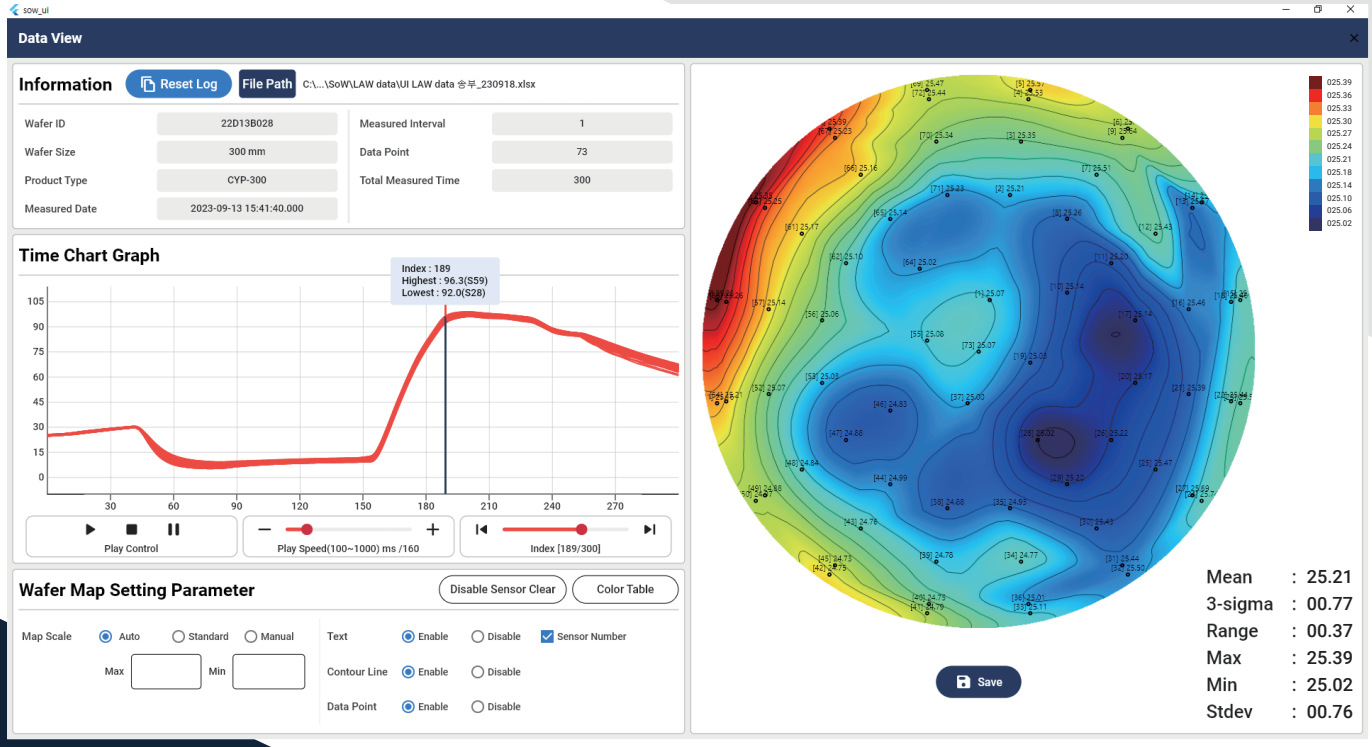
Area of using SoW products

Semiconductor process miniaturization and precision › Process reproducibility › Real-time process mechanism analysis Technology

Process equipment condition diagnosis technology › Increased yield



Custom diagnostic system



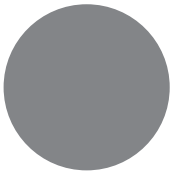
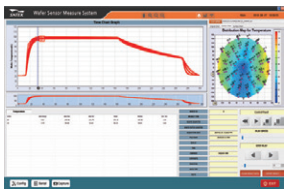
Manufacturing and development capabilities

Possessing dedicated Fab facilities, equipment & analysis systems for the development and production of 300mm wafer type sensors

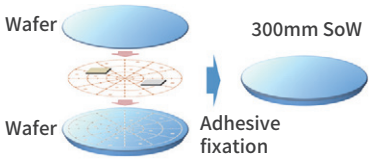
- Development and know-how for wafer-type sensors
- Holds numerous patents essential for the development of various wafer-type sensors

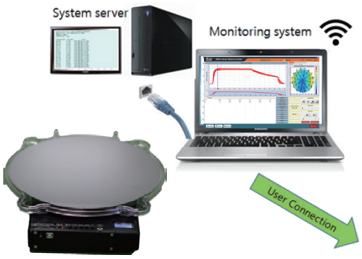
SoW Product

Product main composition

SOW	SINGLE STATION	FOUP	UI
			
Wafer type sensor Ass'y	**Cradle dedicated to SoW utilization**	**Cassette for SoW utilization in process equipment**	**Dedicated program for utilizing SoW**
Between top and bottom there is a built-in sensor /circuit- sensor, driving element, memory, battery, wireless transmission, reception and charging antena, etc.	Wireless data transmission and reception and wireless charging function	Wireless data transmission and reception and wireless charging function	SoW status monitoring, various settings of parameter values, Sending/receiving measurement data and implementing charts

SoW production technology



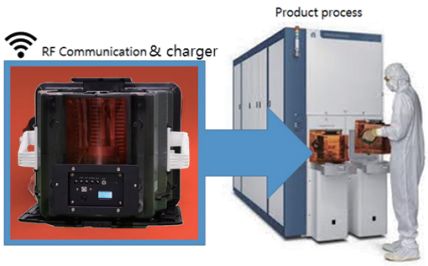


Single Station storage

before/ after of wafer using Sensor storage and the maintation of charging condition

FOUP SoW Loading

Loading & unloading of wafer sensors into process equipment through FOUP



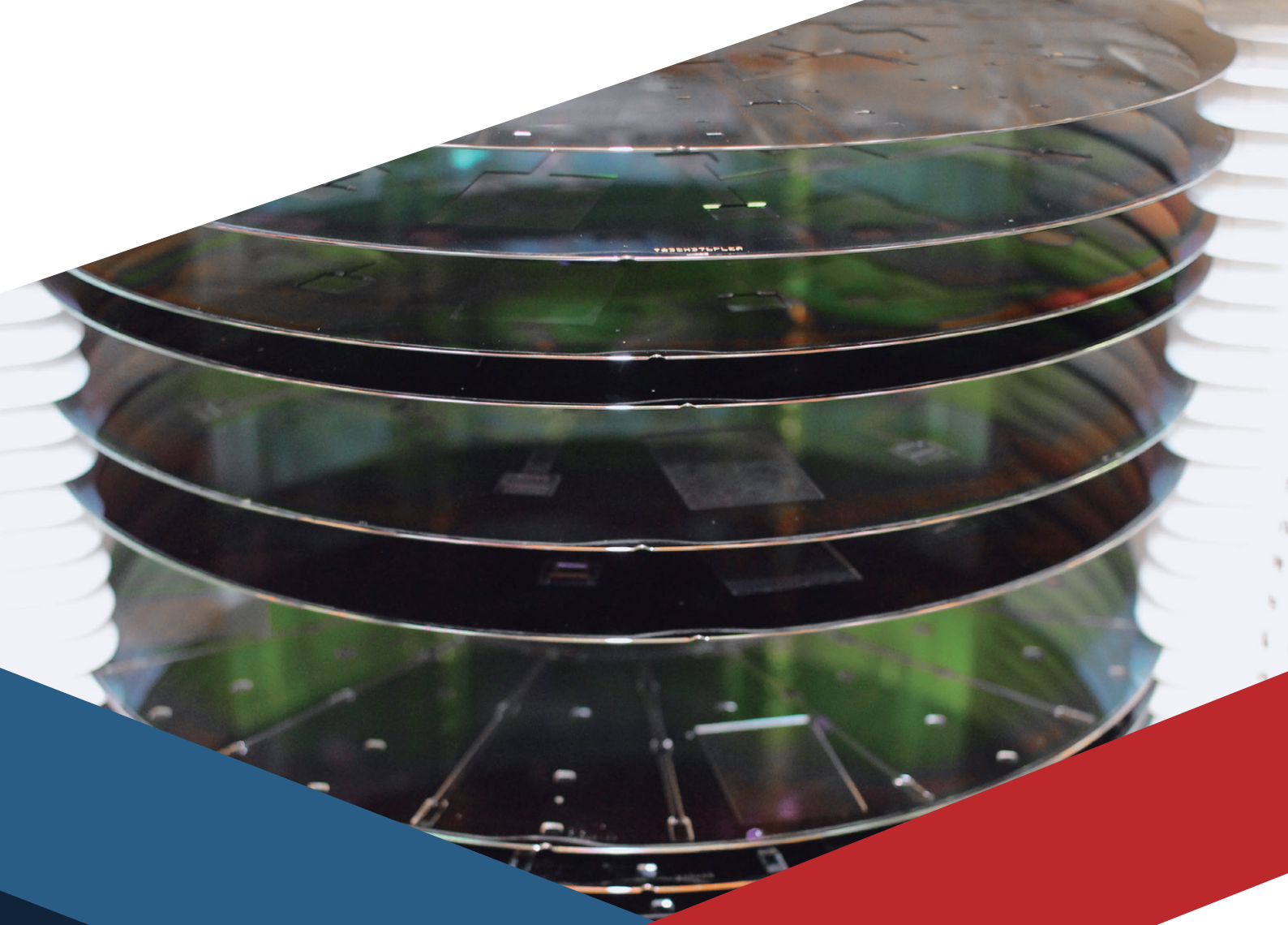
< SoW usage and evaluation diagram >

Reliability performance test

Reliability test : Etcher system

System : ICP-RIE etcher
RF Power : 4.5kW (Source) / 4 kW (Bias)
Plasma “ON” time : 180 sec

Conditions	4.0kw / 4.5kw. 180 sec, 5 times				
NO.	1st	2nd	3rd	4th	5th
Range	38.26	38.41	38.50	38.38	38.41
Max	86.82	87.07	87.27	86.58	86.58
Min	48.56	48.66	48.77	48.20	48.17
Ave	64.45	64.36	64.74	64.42	64.32
3–Sigma	12.21	12.07	12.27	11.98	11.90



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