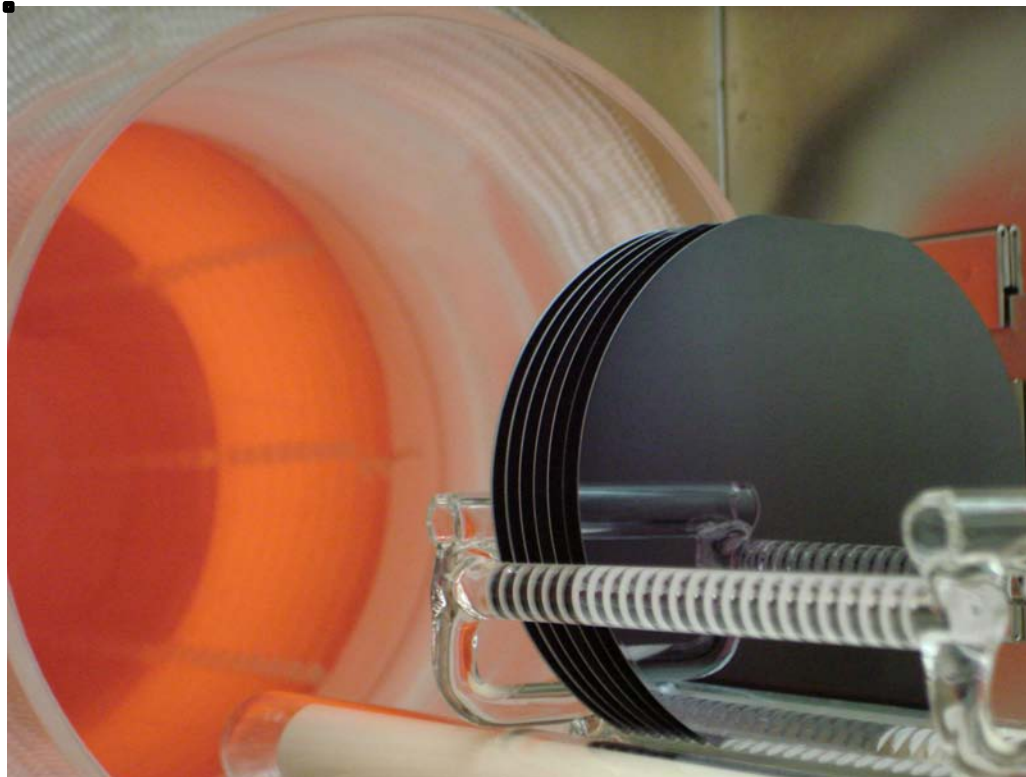


ISNC Tystar Furnace

DI Flash Vaporization
CNSI Building, Level A

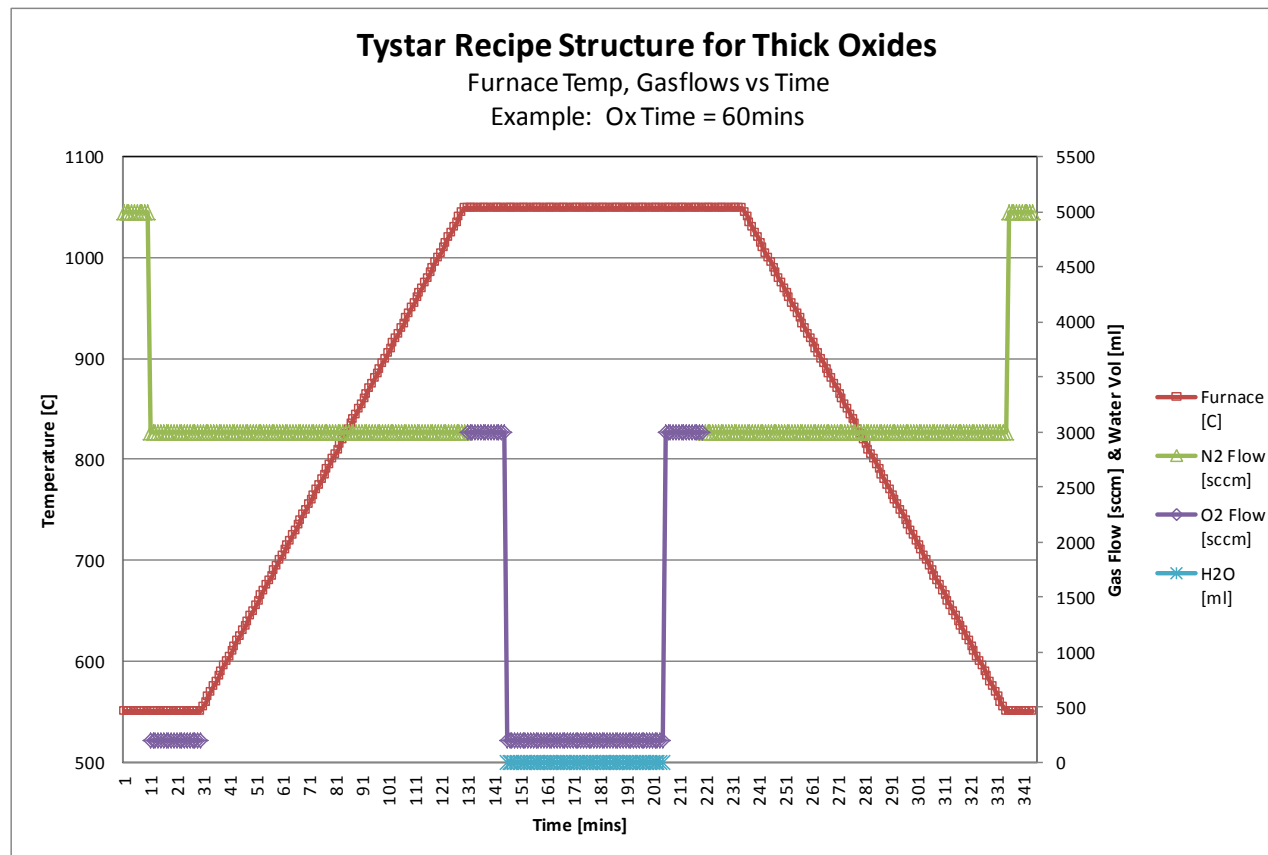


DI Flash Vaporization

- **Very Thick Wet Thermal Oxidation**
 - Up to 10um
- **Substrate: Silicon Only**
- **Wafer Size: 75mm, 100mm and 150mm**
- **Wafer Quantity per Run, Max: 25 wafers**
- **Temperature Max (for process times > 2hrs): 1050C**



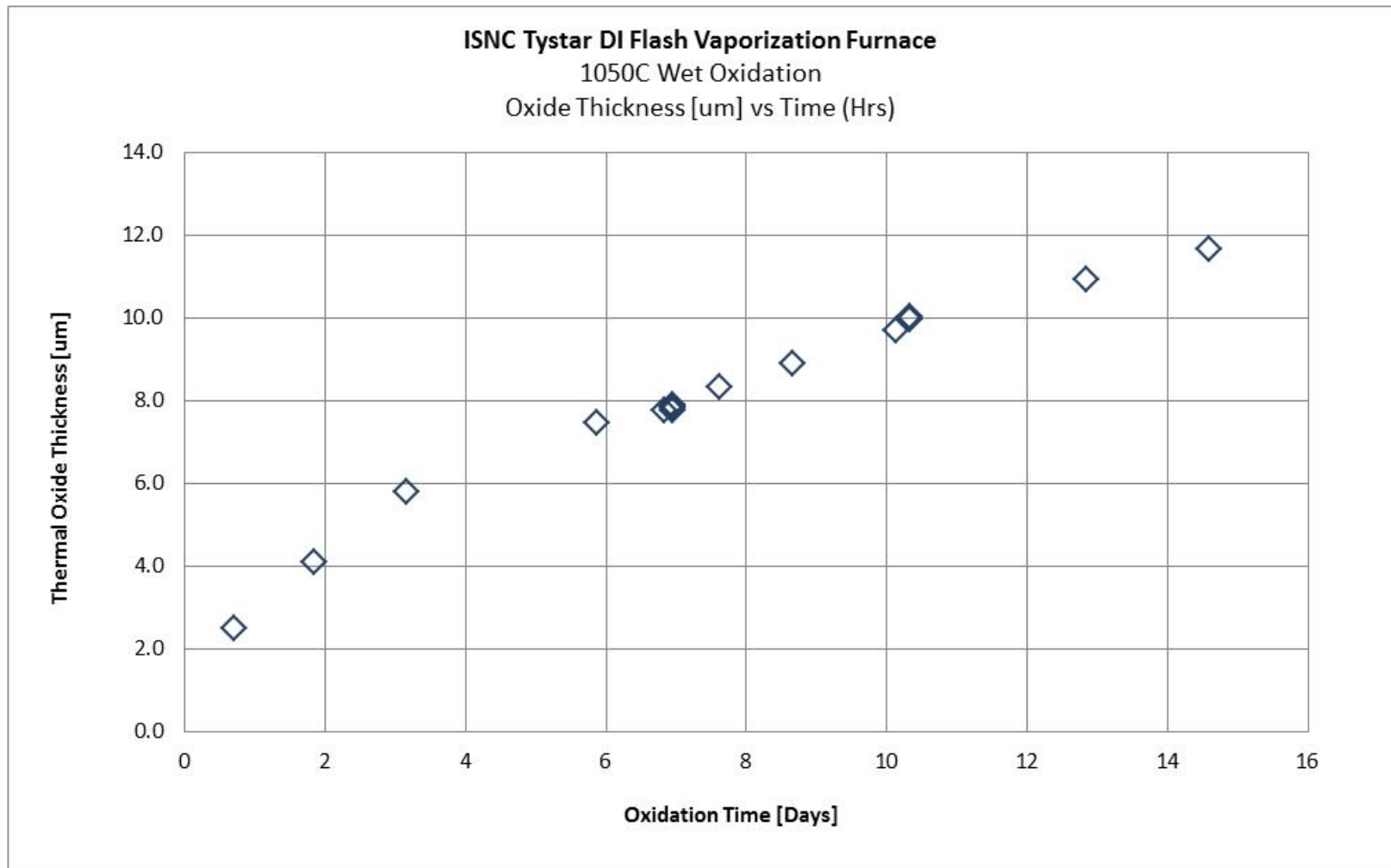
Recipe Structure



Tystar Recipe Structure for Thick Oxidation

1. Boat Load Speed = 5 inches/min, Boat Unload Speed = 2 inches/min.
2. Ramp Up and Down Rate = 5C/min.
3. Oxidation Time Max = 10 days to 12 days.

Growth Chart



Wafer Uniformity ~ Across Wafer 2.5um to 8.9 um

Temp [C]		1050	1050	1050	1050	1050	1050	1050
Time [hrs]		17.0	44.0	76.0	141.0	164.0	167.0	208.0
Ambient		DI Drip	DI Drip	DI Drip	DI Drip	DI Drip	DI Drip	DI Drip
	Flat Down							
1	Center	25137	41097	57933	74632	78061	77455	89039
2	Opp Flat	25111	41054	57868	74553	77482	77063	88572
3	Right	25137	41124	57946	74612	77966	77715	88996
4	Flat	25161	41167	57981	74653	78068	77746	89100
5	Left	25178	41139	57961	74645	77946	77714	89012
X [A]		25145	41116	57938	74619	77539	77539	88944
1 Sigma		26	43	43	40	291	291	212
Range [A]		67	113	113	100	683	683	528
High [A]		25178	41167	57981	74653	77746	77746	89100
Low [A]		25111	41054	57868	74553	77063	77063	88572

Wafer Uniformity ~ Across Wafer

9.7um to 11.6um

Temp [C]		1050	1050	1050	1050	1050
Time [hrs]		243.0	248.0	248.0	308.0	350.0
Ambient		DI Drip	DI Drip	DI Drip	DI Drip	DI Drip
	Flat Down					
1	Center	99999	101400	101300	109200	117100
2	Opp Flat	96605	101200	98600	106300	116700
3	Right	94424	96200	98700	109300	114500
4	Flat	99999	101300	98800	111900	117200
5	Left	94415	98800	103800	109300	117100
X [A]		97088	99780	100240	109200	116520
1 Sigma		2803	2276	2288	1982	1145
Range [A]		5584	5200	5200	5600	2700
High [A]		99999	101400	103800	111900	117200
Low [A]		94415	96200	98600	106300	114500

Other Capabilities

- **Pre-Furnace Clean Available:**
 - Sulfuric + Hydrogen Peroxide
 - Hydrochloric Acid + Hydrogen Peroxide + Water
 - 10:1 HF
 - Spin Rinse Dryers: 100mm and 150mm wafers



Contact Lorna Tokunaga for further information:
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