

Reactor	Oxford Flexal ALD
Date	24-Jul-19
Growth	ZrO2 on 4" silicon wafer
Expected growth rate	1.0 (Best estimate) Angstrom per cycle
Expected Refractive Index	1.97
Recipe Name	mrichmon - TDMAZ ZrO2 Plasma @ 300C
Growth Temperature	300 °C
Precursor	TDMAZ
Number of Cycles	200 Cycles
Angstroms grown	108.05 Angstroms
Gaertner Refractive Index	2.2824 n
Gaertner growth rate (A/cycle)	0.54 Angstroms/cycle
VASE Thickness	Angstroms
VASE MSE	
VASE Refractive index	n
VASE growth rate (A/Cycle)	0 Angstroms/cycle

Gaertner measurements	Thickness (A)	R.I.
Top Left	108.05	2.2837
Top Right	108.05	2.2788
Center	109.21	2.2827
Bottom left	109.10	2.2851
Bottom Right	109.57	2.2815
Average	108.80	2.2824

Recipe information

TDMAZ Dose	230 milliseconds
TDMAZ Purge time	10 seconds
Stabilization time	0.5 seconds
O2 flowrate	60 sccm
Pressure	15 milliTorr
Plasma time	6 seconds
Plasma power	300 watts
Plasma purge time	10 seconds
Plasma purge pressure	80 milliTorr
Bubbler jacket temp (Oven)	70 °C