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Atomic Layer Deposition-1, growth rate and uniformity of Al₂O₃

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Keywords

Atomic Layer Deposition Al₂O₃

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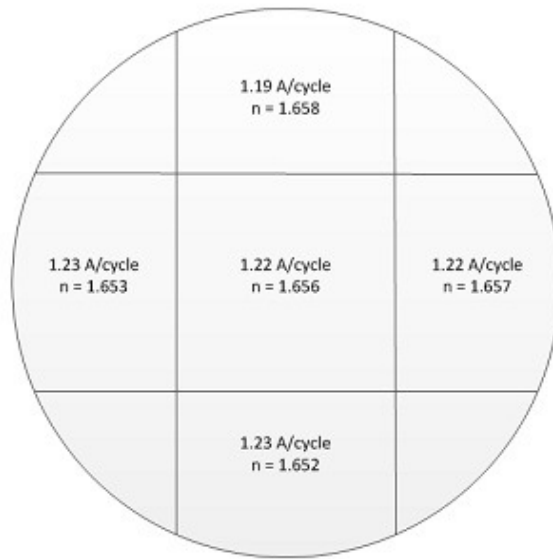
Al₂O₃ grown with Trimethylaluminum (TMA) and H₂O (Graduate Student Fellow Program)

- Prepared by Dhruv Turakhia (9/22/2014)
- 200 °C, 200 cycles
- Growth per cycle (average): 1.22 Å/cycle
 - The native oxide thickness of 1.5 nm was subtracted from the measured thickness.
- Thickness uniformity: 1.5 %
- Refractive index (average): 1.655 at 640 nm (literature value = 1.659 at 632.8 nm)

Default recipes

	Instruction	#	300 C growth	250 C growth	200 C growth	150 C growth	80 C growth
0	heater	9	300	250	200	150	80
1	heater	8	270	250	200	150	80
2	stabilize	9					
3	stabilize	8					
4	pulse	0	0.015	0.015	0.015	0.015	0.015
5	wait		3	5	8	20	30
6	pulse	1	0.015	0.015	0.015	0.015	0.015
7	wait		3	5	8	20	30
8	goto	4	100	100	100	100	100

Gas in



Gas out