

## Supplementary PDF: Conformality of TMA/H<sub>2</sub>O and TMA/O<sub>3</sub> processes evaluated using lateral high-aspect-ratio structures

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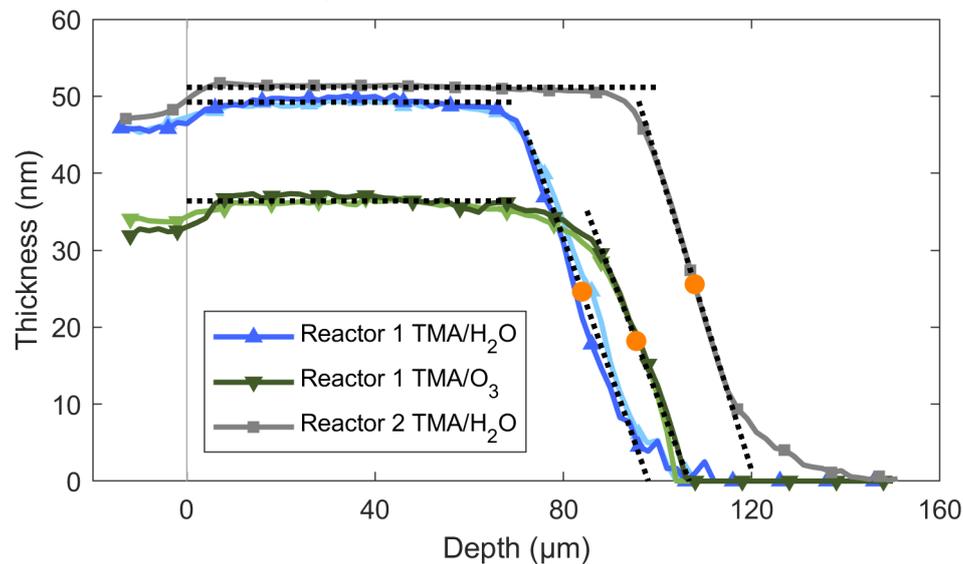
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**Table 1.** Deposition parameters of ALD processes.

	TMA/H <sub>2</sub> O Reactor 1	TMA/O <sub>3</sub> Reactor 1	TMA/H <sub>2</sub> O Reactor 2
TMA pulse   purge (s)	0.015   2	0.015   5	0.1   4
Co-reactant pulse   purge (s)	0.015   2	0.15   10	0.1   4
Carrier gas flow (sccm)	20	20	150
Number of cycles	500	500	500
Reactor temperature (°C)	300	300	300



**Figure 1.** Thickness profiles of different processes. Both TMA/H<sub>2</sub>O and TMA/O<sub>3</sub> processes were deposited on two different test structures with same aspect ratios. Results are average values. The horizontal dotted lines represent horizontal linear fits to the plateau area of the thickness profile indicating growth per cycle values. The inclined dotted lines indicate linear fit to the slope around the half-width thickness point marked with circle. TMA/H<sub>2</sub>O reactor 2 process is shown for comparison from ref [1].

**Table 2.** GPC, half-thickness depth and sticking coefficients of limiting reactants for the ALD processes.

	TMA/H <sub>2</sub> O Reactor 1	TMA/O <sub>3</sub> Reactor 1	TMA/H <sub>2</sub> O Reactor 2 [1]
GPC (Å)	0.98	0.73	1.03
Half thickness penetration depth (μm   Depth/Gap height)	84   168	95   190	108   216
Sticking coefficient [2]	$4.9 \cdot 10^{-3}$	$8.0 \cdot 10^{-3}$	$5.7 \cdot 10^{-3}$

[1] J. Yim, O. M. E. Ylivaara *et al.*, manuscript in preparation

[2] K. Arts, V. Vandalon, R.L. Puurunen, M. Utriainen, F. Gao, W.M.M. Kessels, H.C. Knoop, J. Vac. Sci. Technol. A 37 (2019) art. 030908