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Comparison of ALD saturation profiles simulated with two theoretical models

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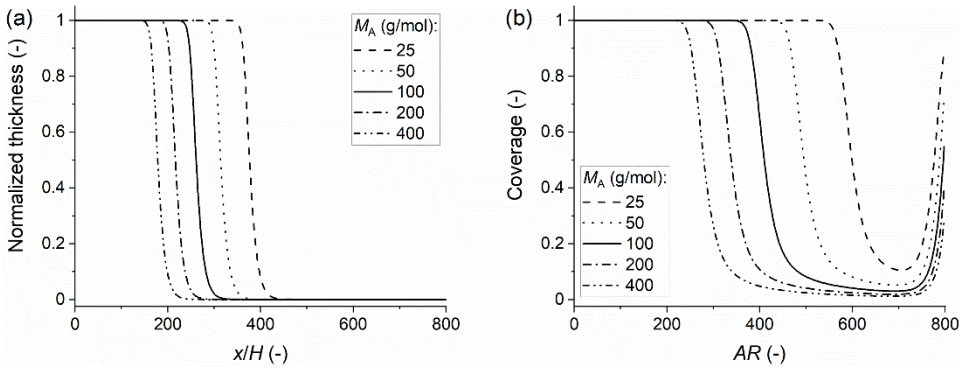

Figure 1. Effect of varying molar mass of Reactant A (M_A) on Type 1 normalized ALD saturation profiles[1] simulated by a (a) diffusion–reaction model (Model A)[1-3] and (b) Machball ballistic transport model (Model B).[4,5] Parameter values for Model A: c = 0.01, H = 500 nm, W = 10 mm, N = 1, T = 250 °C, t_{pulse} = 0.1 s, p_{A0} = 100 Pa, p_B = 500 Pa, M_B = 0.028 kg/mol, ρ = 3500 kg/m^3, q = 4 nm^{-2}, and P_d = 0.01 s^{-1}. Parameter values for Model B: c = 0.01, AR = 800, T = 250 °C, t_{pulse} = 0.1 s, p = 100 Pa, and s_0 = 0.25 nm^2.

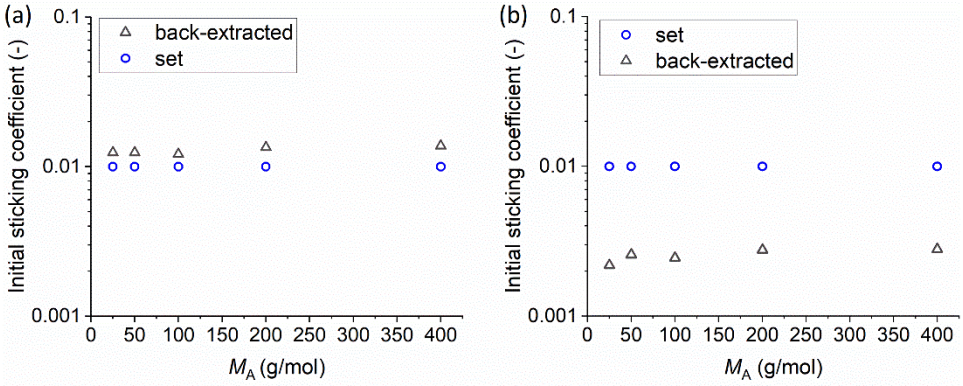

Figure 2. Comparison of the sticking coefficient values initially set for (a) Model A and (b) Model B to the ones back-extracted from the slope of Type 1 normalized saturation profiles simulated by Model A [Fig. 1(a)] and Model B [Fig. 1(b)] using a method reported in a recent study by Arts et al.[6]

References

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